Release 2.12 Pth E. C.111., St. mp. Log Fesser th Telt. Copyright (c) 1993, 1994, 1995. University of Edinburgh, U.K. Distribution rights by Intelligencies, Tel.

MPsrch_pp protein — protein database search, using Smith Waterman algorithm

Run on: Wed Dec 17 11:02:57 1997; MasGar time 8,99 Seconds 528,227 Million 241 updates/seconds

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Listing first 45 summaries

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Stutistics: Mean 35,256; Variance 151,160; work-8,200

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A kappa fatty acid hydroxylase (B94579) is encoded by genemic whose placed-by (T700a) is could from a genemic library of inequencing behavior. The conjunctification is hydroxyl jump 3 critics from a double bond located mean the centre of the aryl chain of from a double bond located mean the centre of the aryl chain of
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Okuley JJ; /home/fuller/dec97/US-08-572-027A-2.rag

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Best Local Similarity 69.7%; Prod. No. 1.30o-190;
Marches 787; Topografica 67; Milariche 67;
                         gos maye.
                                                                                                       Sequence of coro microscemal delta-12 desetorase deduced from cDNA in plasmid pFad2 !
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Claim 13; Page 129 122; 147pp; English.
The green vertex ports $66000 was isolated by symbolical jumbed.
                                                                      Fatty acid; desaturase, lipid; unsaturated; transpense plant
                                                                                                                                                                                         09 NOV-1994 (first entry)
                                                                                                                                                                                                                                 P23700;
                                                                                                                                                                                                                                                                   R53700 standard; Protein;
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Dec 17 11:03

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Fatty acid; desaturase; lipid; unsuturated; transience plant Suspense of easter microstonal delta 12 desaturase dedoted from the cDNA in plasmid paption 42 09-NOV-1994 (first entry) K53702 standard; Protein; 387 AA

Hightner JE, okuley JJ; WFT; 94 183515722. Ricinus communis. [9 NAW 1942; HS.977339. (DUFO) DU FONT DE NEMOURS & CO W09411516-A. 26 MAY-1994. -1993; ma987. Ε1.

WET; 44 ... M PSDB; Q66073. plant lipid composition Claim 13; Page 131-133; 147pp; English. There is a fatty of the was a conservagence To many the state of

identity is 90% or greater to exquence Q66071 is claimed. A method to selline content and transfer produce selline forty and decaturases and related engages is obtained which comparises comparing AA requestions in RCK67-FCKC2 and other fitty and decators as sequences; A COA like agreed on page 19-19, 20 25 DAP) was screened. Radiolabeled price people in m pRPNL or pRPC 17 were with duct all wed to hybridize m PRPNL or pRPC 17 were with duct all wed to hybridize m PRPNL or principly hybridizing pluggers and three of the worldy hybridizing pluggers were principled minority were sequenced and the sequence of plusmod pRP1976 42 to given in principle or princip isolate sequences encoding fatty acid desaturases and despitation—in $\Gamma(n)$ and only west. identifying conserved segrences of 4 or more AAsy designed degenerate flyis has been been discussed and analysis to 387 AA;

Query Match Best Loral Cimilarity 65:4%; Matches 253; Conservative C. We 1958; DB 10; Pred. No. 9.67e-179; 59; Mismatches 70; Indels 5; Gaps DB 10; Length 387;

Sequence

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Ş дb 177 181 GRTVMLTVQFTLGWPLYIAFNVSGRPYDGGFRCHFHFNAFIYNERERLVIIISDAGIIAV grettlaatlilgwplylainvegrpydr-tachydpygpitserorigiyiedigifat 230

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Ş Ş 116 Ş DЪ Ş DЬ Berry Matches 175; Conservative Query Match The reverse transcriptase reaction was primed with random hexances and the FCS reaction will be primers by a primers by a reaction will be primers. WS and WSA (CARROT, CARROTA, A RNA fragment of apprex. 700 by was amplified from both stage I II and stage IV-V mRNA. The amplified DRA fragment from one of the reactions was gel purified and cloned into a vector to observe plasmid pRF2-10. The 700 by insert in pRF2 forwas sequenced (CARROT2). plant lipid composition claim 13; Page 129; 147pp; English. and related enzymes is claimed which comprises; comparing AA sequences in 95369 95370 and the firstly will be seturated and every Genes for fatty acid desaturary endymos - permit ulteration N-PSDB; Q66072. W09411516-A. Ricinus communis. Fatty sold, depathstage; lipid, wheatstated; transpense plant 09-NOV-1994 (first entry) R53701 standard; Frotern; 229 AA desaturase related enzymes. An isolated markete and fragment wherein the purblete will be try is 90% or greater to sequence 0660% is glaimed. A method to 10 CAt) and list from the List beach 1 stages 17 Y (70 75 100).
10 ng of each mRNA was used for separate RT FCR reactions. Polysomal mRNA was isolated from dustor beams of studes 1 11 Lightner JE, (DUPO) DU PONT DE NEMOURS & CO 17 NOV-1992; US-977339. Sequence of castor microsomal delta 12 desaturase dediced by the comm R53701; isolate sequences encoding fatty acid desafurases and oligos based in the conserved sequences; and using the bulges to identifying conserved sequences of 4 or more AAs; designed degenerate isolate nucleic acid tragments encoding fatty acid desatutore 15-00T-1993; UN9987 26 MAY-1994. 161 101 WVIAHECGHHAFSDIQWLDDIVGLIFHSELDVEIFSWKISHKSHHSNIGSLEKDEVFVFK 160 357 360 wreakeclfvepdegaptggvfwyrnk 386 297 TVDRDYGILNKVEHNITDTHVAHHEESTMEHYHAMEATKAIKEILGEYYGEDGTEVVKAM / Match 45.5%; Score 1376; DR 10; Length 224; Local Cimilarity 37.4%; First M., 6.870 127; 61 kkssirwyskylnnppgrimtiavtlslgwplylafnvsgrpydr-fachydpygpiynd 119 l wvmahdoghhafsdygilddvvglilhscllvpyfswkhshrrhhsntgslerdevfvpk 60 plasmid pRF2-10. WREAKECIYVEPDRQGEKKGVFWYNNK 383 KNSDIKWIGKI EME EGNI METAKETEMETEMETEMETEMETEMETEMETEMETEME 94-183515/22. 224 AA; Okuley JJ; 28; Mismatches 71; Indels 7; Taps

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Bisclosure, Page 127 129; 167pp; English.

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Past Land Digitality 41.0% Prod. No. 3.224-61;
Matches 194; Competed for 68; Mismatches 10; Indian 25, Caps 17;
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03 DFC 1992, U10284.
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CDMA encoding the linewhele acid-becaturase (fad3) of R. usper a isolated from a YAC library as no boll 220 and ACAC mathers as probes. Isolated DMA was amplified using the primers given in Q1104 09, and used to receive YAC libraries. The fad given was additional to the fada given and the fada given in the fada given was additional given in the fada given in the fada given in the fada given was additional given was additional given in the fada given was additional given in the fada given was additional given in the fada given in the 
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Disclosure; Page 148-150; 167pp; English.
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52 Ş specific polypeptide

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R60499; R60499 standard; Protein; 446 AA.

Linoleic-acid-desaturase fadD. 28-MAR-1995 (first entry)

Linvleic-acid-desaturase; fadD; transpenio plant; crop improvement;

18-AHG-1994, 04-FEB-1994; U01321.

W09418337-A. Arabidopsis. linolenic acid.

05-FEB-1993; US-014431. 22-NOV-1993; US-156551.

(SWND) (MONS) MONSANTO CO.

RESOLUTION REPORT OF THE RESOLUTION REPORT OF N PSDB; Q71210. Archdel 94 279758/34. UNIV MICHIGAN STATE. Gibson Sl, Kishote GM, BULL Ġ, Somerville

content - conty recombinant, double stranded DNA encoding lineleic acid desaturase, or the autisons of the coding Genetically transformed plants with altered linolenic acid

sequence

The cDNA sequence and deduced amino acid sequence of limiteicacid desaturase fadD of Anabidopsis are provided. Disclosure; Page 75-77; 144pp; English.

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Query Match 22.4%; Score 678; 28 11; Length 446; Best Local Similarity 37.7%; Fred. No. 2.15e 52; Matches 126, Concervative 77; Mismatches 109; Indels 22; Gaps 15;

Ş 9 = 81 eednkqifdpgapppinladiraajpkhrwyknpwkslsyvvrdvaiv--falaagaay- 137 ETDTIKRV-PCETPPETVGELKKAIPPHSEKRSIPRSESYLIMDIIIASCEYYXATTYEP 75

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Ş 136 SWKYSHKOHHOMYGSLERDEVEYEKKYSDIKWYGKYLMMFLORTYMLTVQFT-LGWFLYL 194

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1333337 plust lipid composition (1888) to the lipid composition (1888) to plus lipid composition (1888). The gene curroup to 266070 was isolated by creating lambda pluge. The JOHA library major with poly At mRHA from developing soybean seeds with radiolateled pf87b. The plugemad derived from

phage 169K, designated pDPP 169K, was segmented (066070). Plasmid pDPD 169K was dejiected to the kmon and bears accesses someter Agent 40002. An isolated number and fragment

wherein the circleic arid identity is 40% or greater to

fatty acid desaturase sequences; identifying conserved sequences of which comprises: comparing AA sequences in R53697 R53702 and other GKA320 is claimed. A method to isolate nucleic acid fragments consider that you'ld developes and related obligations.

is on more AAs; designed dependate oligis based on the conserved sequences, and using the oligis to isolated sequences exhalms fatty and designess and design secretaried engages. 279 AA;

Best Query Match Local Similarity 69.5%; (R); Scare 2065; DB 10; Pred. No. 2.15e 190; 52; Mismatches 61; Length 379; [] -],

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364 TYVEPDRQGEKKGVFWYNNK 383

R53700 standard; Protein; 387 AA

09-NOV-1994 R53700; (first entry)

Sequence of corn microsumal delta-12 desaturase deduced from

cDNA in plasmid pFad2 1.

Fatty weid; desuturase; lipid; unsaturated; transgence plant

Zea mays.

PA SE DE DA ID W09411516-A.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 68.44; 2004 2007; 184 10; Best Local Similarity 68.68; Pred. No. 1.40e-184;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 264; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     encoding fatty acid desaturases and related enzymes is claimed which comprises: comparing AA sequences in $50847 80202 and other futty acid desaturase sequences; identifying thermal sequences:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                product of 720bp was purified and used as a probe for screening the corn cDNA library. A plaque was purified and found to encode microsomal delta-12 desaturase truncated at the 3' end. This cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sense and antisense primers, respectively. NS3 and RPSA/R norresp
to stretches of AAs [GirlD3 and SD8 326, [respectively, of BSSA07,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 or more AAs; designed degenerate cligss based on the conserved sequences; and using the cligss to isolated sequences excelling totty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q66071 is claimed. A method to isolate applied acid fragments
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               was used to probed the corn cBWA library again. The clone contag-
the longest insert, designated pPad2 1 was sequenced impletely
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Corn microsomal delta 12 desaturase oDMA was isolated using a PCP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; Q66071.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid desaturases and desaturase related encymes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  wherein the nucleic acid identity is 90% or greater to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              which are conserved in most microsomal deltable desaturases. A FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                corn embryos. This library was used as template for PCR using sets
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        approach. A cDNA library was made to poly A+ mBNA from developing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 13; Page 124 126; 147pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genes for fatty acid desaturase enzymes - permit alteration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lightner JE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (DUPO ) DU PONT DE NEMOURS & CO E I.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (266071). An isolated nucleic acid fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17-NOV-1992; US-977339.
                                                                                                                                                                                                                                       246
    360
                          366 ageciyvepe---drkgvfwynkkf 387
                                                                                                 300
                                                                                                                                       306 rdygilnrvfhnitdthvahhlistmphyhameatkairpilgdyyhfdptpvakatwre 365
                                                                                                                                                                                          240
                                                                                                                                                                                                                                                                                                                                187
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                                                                                                                                                                                                                                                                                                                                                                                                                         127 vvglvlhssimupyfswkyshrrhhantyslerdevfypkkkealpwytpyvynnpvgrv 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                67 viaaallyfalainpalpsplrysswplywiaggcvctgvwviahocghhafsdyslidd 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          61 ITASCEYYXATTYEFILIPHPIS: FAMELIWACQUIVLIGVWVIAHECGHHAESDYQWIDD 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         degmenate oligos NOS (266075) and NBSA/B (266077,266078) as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -OCT-1993; U09987.
                                                                                                                                                                                                                                                                                                          AKECIYVEPDRQGEKKGVFWYNNKL 384
                                                                                                                                                                                        LERYAAAQQAVASMVCFTCVFTLGAAAGELVGTTALLIHHHHHHHHHHHHHHHHHHHHHHHHHHHH
                                                                                                                                                                                                                                     lyklaaafguwwuuruyaupiliunawlulitylqhthpslphydssewdwlrgalatmd 305
                                                                                                                                                                                                                                                                                 VMLTVQFTLGWFLYLAFNVSGRFYDGGFRORFHENAFIYNDRERLQIYISDAGILAVCYO 239
                                                                                                                                                                                                                                                                                                                                                                            TVGCIPHGETLVETESWEYGHHGAHGAHGALGASAFAVERESHERTESH 179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MCAGGRMQVSEESERSEEDTIKKVINTENETIVIELEETAIBEBOEKESIERSESTLIMOI KO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    mtekerekqeqlaratggaamqrspvekppftlgqıkkaipphcfersvlksfsyvvhdl 66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94-183515/22.
                                                                                             RDYGILNKYFIRAITDTHYAHHIPECTMFHYHMEATKAIKFILGEYYQFDGTPVVKAMWEE
                                                                                                                        lipid composit:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  387 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Okuley JJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48; Mismatches 68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 367;
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240 tfvlygatmakglawvmriygvpllivncflvmitylghthpaiprygssewdwlrgamv 299

CRTVMLTVQFTLGWPLYLAFNVSGRFID33FHJHFHFNAFITNDRERIQITISDAGILAV 236

45 AS

Ъ 8 맖 Ş Ъb Q дd Query Match Matches 252; Conservative Lightner JE, Okule WPI; 94 183515/22. W PSDR; Q66973. castor beans (stages IV V, 20-25 DAP) was serected. Baddedabeled gither prof. for p2522 to pere added and allowed to bybridise. Three of the strongly bybridising playues and three of the weakly hybridising playues were purified. The inserts were the weakly hybridising plagues were purified. The inserts were Ricinus communis. Fatty acid; desiturace; lipid; unsaturated; transgenic plant Sequence of custom microsomal delta 12 desaturate deduced from the cDNA 09. NOV.-1994 R53702; B53702 standard; Protein; 387 AA Sequence identifying conserved sequences of 4 or more AAs; designed degenerate chigs based on the reserved sequences; and using the oblighs to and related encymes is statmed which comprises: comparing AA sequences; sequential and the sequence of plasmid ppp1974 40 to given in QCCCT1. An is:1976d curlett arid trapment who text the curleto acid A THAT like any made to gray At mRNA isolated from developing plant lipid composition Genes for fatty acid desaturase enzymes - permit alteration of 17 NOV 1992; US-977339. (DUPO) DU PONT DE NEMOURS & CO E I. ₩094!!S!K-A. desaturase related enzymes. identity is 90% or greater to sequence $\mathfrak{C}(60\%)$ is claimed. A method to isolate nucleic acid fragments encoding fatty and desaturases 15-0CT-1993; E09987 17 NOV 1992; US-977; in plasmid pRF197C-42. isolate sequences encoding fatty acid desaturases and Claim 13; Page 131 133; 147pp; English. 117 WIDDITYOLIFHUR IIVER ELWELSHEIBHGADESHERER ER VERFETTEWETETBARE 176 181 grvltlaatlllgwplylafnvsgrpydr-fachydpygpitsererlqiyiadlgifat 239 121 laddinglinhoallupyfswkyshrrbhenigslerdenfupkekekiswyekylnnpp 180 6: 57 JWDIIIASCEYYXATTYFELLEHELSIFÄWELIMA QUCVLTUVWVIAHECGHHAESDYQ 116 1 MCAGGRMQ V SONG KKSETDTIKRVFCETPPFTVGBLEGAINTHCEKRSIPRSFSYL 56 avnfelsflsysiatnffpyissplsyvawlvywlfqqeiltglwvighecghhafseyq 120 64.4%; 387 AA; Okuley JJ; (first entry) Score 1946; DB 10; Length 387; Fred. No. 1.82e-178; indels 5; Gaps 59; Mismatches 71; indels 5; Gaps

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                                                                                                                                                                                                                                                                                                                         Matches 174; Conservative
                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          desaturase primers 633 and 804 (p28076, p28076). A SRA fragment of appreciations are precisely from the large 12 and a repetitive means and the relations was gel purified and closed into a vector to greate plasmid pRF2-10. The 700 bp insert in pRF2-10 was sequenced (p28072). An isolated nucleus acid fragment wherein the nucleus acid destity is $35 or greater to sequence \( \phi \) 6071 is visited. A method in a solute fraction to greater to sequence \( \phi \) 6071 is visited acid destinates and related enzymes is claimed which comprises comparing AA sequences in FSSA3 ECSA and then in thy and desaturase repetitions.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        plant lipid composition Claim 13; Page 129, 147(p) English Polysomal mRNA was isolated from caster books of stages [51] (September 12).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; Q66072.
                                                                                                                                                                                                                                                                                                                                                                                                                    aprilar bac
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         identifying conserved sequences of 4 or more AAs; designed degenerate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   The reverse transcriptuse reaction was primed with random hexamers and the FOR reaction with degenerate delta-12
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Fatty acid; desaturase; lipid; unsaturated; transgenic plant
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                                                                                                                                                                                                                                                                                                                                                                                                                                        desaturase-related enzymes.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                isolate sequences encoding fatty acid desaturases and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1] PAG and also from instant terms of stages IV C (70-25 IAR)
10 ng of each mBNA was used for separate RT-FCR reactions
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Lightner JE,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          in plasmid pRF2-1C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence of restor mirrosomal delta-12 desaturase deduced by the cONA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Aligns based on the conservation personal action of the chips of
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                                                                                           120
                                                                                                                                      161 KKSDIKWYGKYMNYEGETYMETYGETEGWELYIAFNVSGREYEGGERCHEHPNAFIYND 220
                                                                                                                                                                                                                                                                                                                    y Match 45.1%; Soute 1264; DB 13; Length 224; Local Similarity 77.0%; Pred. No. 2.44e 129; hee 174; Conservation 28; Mismatches 22; Indels 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          357 WREAKECTYVEPDRQCHKKCVFWYNNK 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      360 wreakeclfvepdegaptggvfwyrnk 386
                                                                                                                                                              1 wvmahdcghhafsdygliddvvglilhecllvpyfswkhshrrhhentgslerdevfvpk 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOV-1992; US-977339.
                                                                   rerieifsdagvlavtfglyglaiakglawvvvvygypllvvnsflvlittlghthpal 179
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phydssewdwlrgalatvdrdygilnkwfhnitdtqvahhlf-tmp 224
                                             KERLQIYISDAGILAVOYSLERYAASQOVACAVOEYGVULLIVAIGEL/LITYIQHTHESL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Okuley JJ;
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281 PHYDSSEWDWERGALATVERDYGILNKVEHNITDTHVARHEFSTMF 326

R37592 standard; Protein; 386 01-007-1993 (first entry) R37592; Comparison of Jelia 15 desaturase.

Lipid composition; modification; fatty acid besaturase; enzyme.

Arabidopsis thaliana, clone pCF3. 03 DEC 1992; U10284. 04 DEC 1991; US 804259. W09311245-A. 10-JUN-1993.

Browse Yadav NS; (DUPO) DU PONT DE NEMOURS & CO E I. J, Grau LP, Kinney AJ, Pierce JW, Wierzbicki AM

WPI; 93 197063/24.

Isolated murleis acid tragment, for plant lipid compsn. modification - comprises nucleic acid sequence encoung latty # FSS#; Q43762. acid desaturase or related enzyme with high aminoacid identity to

ACCULATE PROPERTY OF ACCULATE PROPERTY OF ACCULATE ACCULA is the Arabidopsis matrosomal delta 15 desatriase was confirmed by its kindepied concerpression in plant tissues. Concrete direjions of RATCA are useful in designing long elignments for typicdization as Disclosure, Page 127–129; 167pp; English.
[CPR was looked from a CRW library using a 5.2 kb Hind III
[tegment containing wild type genomic DWA as a radiolobeled
hyberidia from probabilities of the sequences; primers as be to the page
hisert was also used. The identity of the cape ssion product of page
hisert was also used. The identity of the cape ssion product of page. 4-II as charter the for two as primars in the POB. Classification, in an approximate \$43013 (\$43034). specific polypoptide

Su⊸ly Match Bost (ora) Si Matthe Match 25.1%; North Similarity 40.7%; A0.7%; State 760; DB 7; Fied. No. 1.10e 60; 68; Mismathbas 101; Indois 25; Gaps 16; Lamyth 386;

386 AA;

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Ş 85 AWPLIWACQGCVLIGVWVIAnbaGdinArSbrowhlbbIvGLienseallycleSwKTSHRSH 144

Ş 141 handaharadeaweplper v. ykklphst. rmirytyplpmlayplylayrspyk-- 193 145 HENTOSLERGIYEVERREKSILENYSKYHNAPLSETYKLTYÇTT ISWILYLAFNYEGREY 203

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Ы 194 eys---hfnpysslfapserkliatsttcwsimfvsliaisfvfgp-lavlkv-ygvpyi 248

Ş 204 DUGENONENHWAFTYNERERIQIYISBA SILAVOYSIFYYAAGQGVASAVOFYOVELL 261

Ŷ J) 249 itvmwldavtylhhhghdeklpwyrgkewsylrgglttidrdygifnnihhdi-gthvih INVOSTATITATION THES THERESEMBMEEGVIVIANDEDACTIVENHALIDITAMENT

329 HPFSTMPHYHAMEATKAIKPILGEYYQ 346

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                            R37595 standard; Protein;
R37595;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Linoleic-acid-desaturase; fad3; oilseed rape; rapeseed; transgenic plant; grop improvement; years artificial whromwemen;
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content - config recombinant, double stranded DNA enceding
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             60% identity with, and colinous with, the Arabidopsis plasted collect 15 desaturase polypoptide listed in 827-01. Received costs 162 to 382 encode the polastic polystid transit peptide, entimers with and starting some homology with the transit peptide described for the Arabidopsis plasted debta-15 glyperolipid desaturase (837-92).
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pOFS was isolated from a cDNA library using a 5.2 kb Hind II
fragment containing wild-type genomic DNA as a radiolabeled
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04-DEC-1991; US-604259.
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263 ktg shfdpssdlfvpmerkdv itstacwormlgllvylgfvmgpiqllklygvpyvi 319
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120 ilvpyhgwrishrthhqnhghvendeswhpm--se-kiy-ksldkp-trffrftlplvml 174

70 ATTYPPILIPHPLSYFAMPLYMACOGULDGVMVIAHFURHHAFSGUGMIGDTVGLIFHSF 129

adaay 1-b mwlwwplywraggtmiwalfvlghdeghysfsodprinsvvghilhss 119

10 SPPSEEDTHERVECKTETTVASELELAIMELESSAIFAAAAA IWI IIIAATTIK 69 7 ssppiecepktgridpgapppfnladiraaipkhewvknpwksmsyvvrelaiv--fala 64

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81; Mismatches 113; Indols 21; Gaps 14;

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CMPLYTAFMVSGRIYDGGFROHEHBNAFTMURERGATTTSGAGTLAVCTGTFRYAAQQC

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290 nihhdi-gthvihhlfpqiphyhlveate-akpvlgkyyr 328 :: |:| ||| || || || :||| || :||| || ||| 328

307 KVFHNITDTHVAHHFFSTMFHTHAMEATKAIKFILGETTQ 346

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pCF) was esclated from a SPAN literry using a 5.2 kb Hind III
trapposit containing wild-type gamemic BNA as a radiolabeled Prowse Ligid composition; modification; fat Anabidopsis thaliana, close pACF2 2. 01-00%-1993 (first entry) R37593; R37593 stundard; Protein; 446 AA specific polypeptide acid desaturase or related entyme with high uninoacid identity to (DUPO) IN PONT DE NEMOURS & CO E I. W09311245-A. Sequence of a plastid delta is fatty and docuturuse. WPI; 43-147063/24. Yadav NS; 03-DEC-1992; U10284 64 DFC 1991; NS 864259. Gran IP, Kinney AJ, Pierce JW, Wierzbicki AM, fatty anid dosatus soos ongymo.

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Search completed: Wed Dec 17 11:86.29 1997

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Release 2.12 John E. Collins, Birong ting Bosometh Unit. Copyright (c) 1990, 1994, 1985. University of Edinburgh, C.E. Distribution rights by IntelliGenetics, Inc.

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Party acid, desatorase, lipid; unsaturated; transpose plant.

Brassica napus.

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17-NOV-1992; US-977339. (DUPO) DU PONT DE NEMOURS & CO E I.

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The gene contrapt to 066060 was isolated by softending looked phage cORM library mode with poly At mRRA from developing B. inpus socida with 131 librated population of the phage social from the property of solved from phage 1650, designated populations of the suppressed (060040). Plasmid FC 1651 was ignited as offeror 15, 1992 with the AFT and bears consistent number, AFTC 69944. As it also described and disorder and tragment

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Similarity 89.6%;
VAN DE LOO E J
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 2742; DB 10;
Prod. No. 1.70m 253;
21; Mismatches 18;
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Broun P, Somervil WPI; 96-200914/20. N-PSDB; T27011.

Somerville C, Van De Loo EJ;

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AC DT DE DE PN PP PR PR
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15-OCT-1993; U09987.
17-NOV-1992; US 977339.
(DUPO ) DU PONT DE NEMPURS & CO E I.
                                                                                                                                                                                                                                                                                                                Glycine max.
                                                                                                                                                                                                                                                                                                                                                                                                                                   plasmid pSF2-169K.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A kappa fatty acid hydroxyllase (890879) is enickly by associately plesquelyd (727011) isolated from a genomic library of bespecially foundation. The encycle introducers a hydroxyl group 3 carbons fictal from a double bond librated near the pentils of the acyl duals of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sunflower or cotton, contq. a fatty and hydroxylasm Claim 1; Page 68-69; 185pp; English.
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                                                                                                                                                                                       26 MAY 1994.
                                                                                                                                                                                                                                                            WO9411516-A.
                                                                                                                                                                                                                                                                                                                                                                         Fatty acid; desaturase; lipid; unsaturated; transgenic plans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence of soybean microsomal delta-12 desaturase deduced from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09-NOV-1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R53699;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              R53699 standard; Protein; 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a fatty acid. It shows 92.28 similarity and 84.8% identity to
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Local Similarity 80.0%;
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W09411516-A
                              Zea mays.
                                                                    Fatty acid; desaturase; lipid; unsaturated; transgenic
                                                                                                               cDNA in plasmid pFad2 1.
                                                                                                                                                 Sequence of corn microsomal delta-12 desatorase deduced from
                                                                                                                                                                                                   09-NOV-1994
                                                                                                                                                                                                                                                                        R53700 standard; Frotein; 387 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  glage 1696, dos. patent p000 1696, was sequenced (g0000). Flasmad g000 1696 was deposited to obtain 16, 1990 with the AFCC and bears
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     plant lipid composition
Claim 13; Page 120 127; 147pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      acid desaturases and desaturase related enzymes
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Local Similarity 20.5%;
bas 26%; "cosacratical
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Prod. No. 2 246-1
F7; Magnet No.
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29a-191;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    approach. A cDNA library was made to poly A+ mPNA from developing count embtyws. This library was used as template for PPP using series of deginerate olique NGS (QAGGER) and ARMA/R (QAGGER), GAGGER) and ARMA/R (QAGGER), respectively. NS3 and RBSA/B corresp. to stretches of AAs 101-102 and 318-326, respectively, of RSA/B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 or more AAS; designed degenerate ologon besend on the conserved sequences; and using the oligon to reclated sequences wheeling fully
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q66071 is claimed. A method to replate nucleic acid fragments encoding fatty acid destrurases and related engages is claimed
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       which are conserved in most microsomal delta-12 desaturases. A FCR product of 720bp was purified and used as a probe for screening the corn cENA library. A plaque was partified and found to encode microsomal delta-12 desaturase truncated at the 3' end. This cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          which comprises: comparing AA compositive 853602-853702 and other
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      wherein the nucleic acid identity is 90% or greater to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             was used to probed the corn cDNA library again. The chome contg. the lungest insert, designated pEndS I was requested simpletely make TV was local.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Corn microsomal delta-12 desaturase cDNA was isolated using a PCP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 13; Page 124-126; 147pp; English
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                                                                                                                          306 rdygilnrvfhnitdthvakhlfstmphyhammaatkairpilgdyyhfdptpvakatwre 365
                                                                                                                                                                                               240 EXPYANQONARMYTYON LLIMB FLUILT FLQBEBYTH HOSSWIWLKOALATVI 299
                                                                                                                                                                                                                                                                                              180 VMLTVQETLGWELYLAENVSGHEYDGGEACHEHENAFTYNDRERIGTYISDAGILAVCTG 239
                                                                                                                                                                                                                                                                                                                                                                                           y Match 67.30; Circ 2017; IB 10; Local Similarity 69.40; Fred. No. 5.39e 183; hes 207; Circurative 46; Mismatikes 67;
    360 AKECIYVEPDROGEKKGVFWYNNKL 384
                                                                                                   300
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                                                                                                                                                                                                                                                                                                                                          187 vhivvqltlgwplylatnasgrpypr tachfdpygpiyndreraqifvsdagvvavafg 245
                                              366 ageciyvepe… drkgvtwynkkt 387
                                                                                                                                                                                                                                                                                                                                                                                                                                         127 vvglvlhsslmvpyfswhyshrillisnigslerdevfvpkkkealpwytpyvynnpvgrv 186
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   67 viaaallyfalaiipalpsplryaamplymiaggevetgvmviahoeghhafsdyslidd 126
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                                                                                                   RDYGILNKVEHNITDTHVAHHLESTMPHYHAMEATKAIKPILCEYYGLHCTPVVKAMWRE 359
                                                                                                                                                                                                                                                                                                                        An isolated nucleic acid fragment
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                                                                                                                                                                                                                                                                                                                        Ser. 34. 387;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A LERA library m. b. 1, p.ly Be mRMA isolated from developing castor leads (stages TV V, 20 20 (EMP) was accounted Scalinstelled probe peped. Inter pSERD or pEEP210 were added and allowed to type idiase. These of the strongly hybridising plaques and three of the weakly hybridising plaques were purified. The inserts were emparated and the sequence of plasmid pRF1970 42 is given in pF6971. An isolated involving a clid trajport where in the curleic acid trajport where in the curleic acid trajport where in the curleic acid to sequence 066071 is disport. A month of the
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17 NOV 1992; H5-077339;
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                                                                                                                                                                                                                                                                                       177 GRTVMLTVQFTLCWFLYLAENVSGRFYDDGFACHEHENAFIYNUKERIQITISUAGILAV 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                        117 TERRETARIA CONTRACTOR MANAGORIO DE PROPERTO DE PROPERTO DE 110 PER 111 PER
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                                                                                                                                                                                                    240 tivlygatmakg awwmitygwplliniotlwcirylghthpicprygosowdwlegiou 299
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   57 IWDIIIASCFYYVATTYFPLLPHPLSYFAWPLYWA-QGCVLTGVWVIAHECGHHAFSDYQ 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Match 65.8%;
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                                                                                                                                                                                                                                                                                                                                                                  grwltlaatlllgwplylainvegrpydr-fachydpygpiisococlgcycadlgciat 239
                                                                                                                  387 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Scote 1992; DB 10; Length 387;
Eted: M.: 1.476-179;
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В Ş g Ş 2 Ş 96 Ş Query Match Matches 180; Conservative plant lipid composition
Claim 13, Page 123, 1474; English
Folysomal mBHA was usabled from restor beans of stages F-TT (5, 17, 18) and mBHA was usabled from restor beans of ST-PH (27, 27, 18)), if each mBHA was usable for equation ST-PH resultions.
The reverse transcriptions resultion was primed with random was gel purified and closed into a vector to create plasmid pRF2-1C. The /UU bp insert in pRF2-1C was sequenced (Q55072). An isolated nucleur acid fragment wheters the nucleur acid identity hexamets and the SCB reaction with depolectate delta 12 describes are primers ACS or 1609 (pieces, primer). A CBB fragment of approx. Too be was simplified from bits traye 1.61 and study IV-V mBNA.The amplified SCB fragment from the first fitter primers. Ricinus communis. oligos based on the conserval avalables, and using the oligos t and related enzymes is claimed which comprises: comparing AA sequences; sequences; Genes for fatty acid desaturase ouzymes - permit alteration of N PSDB; Q66072. WPI; 94-183515/22. 15-0CT-1993; U09987. 17-NOV-1942; NS-977339 Fatty acid; desaturase; lipid; unsaturated; transpende plant 09-NOV-1994 (first entry) R53701; R53701 standard; Protein; 224 desaturase related enlymes. isolate nucleic acid fragments encoding fatty acid desaturases is 30% or greater to sequence 266071 is claimed. A method to Lightner JE, 26-MAY-1994. in plasmid pRF2 lc. Sequence of dastor midrosomal delta-12 decatorase deduced by the cDWA isolate sequences encoding fatty acid desaturases and identifying conserved sequences of 4 or more was; designed degenerate I A OO S SENDOMEN EN INOO IND (DOUN) 247 TVDRDYGIIMKVEHNITDTHVAHHLESTMEHYHAMFATKAIKPILGEYYQIHGTPVVKAM 356 101 WVIAHECCHHAFEDY@WLDDYYCLIFHSELLVPYFSWEYSHREHHENTCGLEFDEVFVFF 160 161 KKSDIKWYSKYLWNEISKIVWLEVÇETLSWELTLAEMVESKEVESGEFACHEHENAFLYND 220 357 WREAKECTYVEPDEQUESSIVEWIND 181 y Match 46.8%; Score 1416; DB 10; Length 224; Lecal Similarity 79.6%; Exed. M., 4.59e 183; 360 wreakeclfvepdegaptqqvfwyrnk 386 61 kkesirwyskylnoppgrimtiawtlelgwplylatnysgrpydr fachydpygpiynd ll9 1 wvmahdeghhafsdyqllddvvglilhs~llvpyfswkhshrrhhsntgslerdevfvpk 60 Okuley JJ; 25; Mismatches 19; Indels 2; د: دز:

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43

180 gtydsseedwlrgeletededygeletereteet degesteleter 224

221 RERIQIYISDAGILAVGYGLYBYAANQGVASMYCEYGVPLLIVNGFLVLITYIQHTHPSI 280

301 DYGILNKVEHNI: DTHVAHHLESTMPHYHAMEATKAIKFILGETYQ 346

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281 PHYDSSEWDWLKGALATVDEDYGLLNKVFHNITDTHVAHHLESTMP 326

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Best [and] Similarity 39.6%;
Matches 137; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure, Page 127-129; 167pp; English.

pCP3 was isolated from a SDNA library using a 5.2 kb Hind III
frequent containing wild-type general DNA as a radiolabeled
hytrilization posts. One of the sequenceing primers must be the pCP3
incert was also used. The labelty of the organisation printing from the pCP3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 modification
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       R37592 standard; Protein; 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 specific polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       acid disaturace or related ensyme with high aminoamid identity to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Isolated nucleic acid fragment, for plant lipid compan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; Q43202.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Yadav NS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Browse J, Grau LP, Kinney AJ, Pierce JW, Wierzbicki AM,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (DUPO ) DU PONT DE NEMOURS & CO E I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 03 PEC 1992; H10284.
04 PEC 1991; H5 804259.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Arabidopsis thal ana, clone pCF3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Lipid composition; modification; fatty acid desaturase; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence of delta-15 desaturase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01 OCT-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            as the Alabidopsis miorosomal delta-15 desaturase was confirmed by
                                                                                                                                                                 176 plpmlayplylerispgh og s hfnpyssffigenriki storr weimtvslia 229
                                                                                           230 lsfvfgplavlkvygvpyiifvmwldavtylhhhyhdeklpwyrgkewsylrggltridr 289
                                                                                                                                         185 QET-LGWELYLAENVSGREYDGGEACHEHENAFIYNDKEKLQIYISDAGILAVGY GLYR 242
                                                                                                                                                                                                                                     125 TERSELLVETESMKYSHKKHRSHTGSLERDEVEVETERGSSTRWISKTERREPGGETVMLTV 184
                                                                                                                                                                                                                                                                            121 ilhsfilupyhgwrishrthbaphahaendeswoplper o ykk lphs-trmlryto 175
290 dygifnnihhdi-gthvihhlipgiphyhlvdatkaakhvlgryyr 334
                                                    243 YAAVQGVASMVCFYGVELLIVNGELVLITYLQH-THES-LEHYDSSEWIWLEGALATVDE
                                                                                                                                                                                                                                                                                                                              65 CEYYVATTYEPLLPHPLSYFAWPLYWACQGCVLTGVWVTAHGCGHHAFSOYQWIJOOTVGL 124
                                                                                                                                                                                                                                                                                                                                                                          68 ula-lawy - v d swflwplywaaggtltwalfvlybdrybgatodipllnowyh 120
                                                                                                                                                                                                                                                                                                                                                                                                                        FINAL CONTRACTOR OF THEFT VALUE AND THE STREET THAT IS A SECOND OF A
                                                                                                                                                                                                                                                                                                                                                                                                                                              comprises nucleic acid sequence encoding fatty
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Stad. Wo. 1.265-62;
75; Mismatches 110; Tubils 74;
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R60498 standard; Protein,

5.

R60498;

28-MAR-1995 (first entry)

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문 Ş 17 Ş В Ş В Ş В Best Local Similarity (4.75) Matches 128; Conservative Query Match encoding related desaturases from soybean. The insert of pSEPLISE proof, new a step that I ICC such the International PSEPLISE proof, new a step that I ICC such the International PSEPLISE (1975) of about an appear could be a moderate with, the Arabidipsis plasted delta-15 desaturable polypeptide listed in P37593, Nucleotides 169 delta-15 desaturable polypeptide listed in P37593, Nucleotides 169 R37592 are useful in designing long oligomers for hyperidization as well is shorter was facture as promoted in the PMP. The sequences of useful regions are given in Q43213 Q43224. Archidepsis delta-15 isolated models and trapment, for plant lipid companimodification - comprises muchin and sequence encoding tatty acid desaturase or related enzyme with high aminoacid identity to Sequence specific polypeptide Dischesure, Page 148-150; 167pp; English. Browse J, Grau IP, Kinney AJ, Pierce JW, Wierzbicki AM, Glycine max, clone pSFD 118bwp. Sequence of soykean plastid delta=15 desaturaso. LLLL tamporities = 355 orthory for your desprishing engymorphism = 250 orthory for your following maximum along the state of the second for the second 01-0CT-1993 (list entry) the Arabidipois possible but a 15 gly veriligid decignings and sharing some homology with the transit peptide described for desaturace which was used as a hybridication probe to seed one of Mag deposited under ATCC 68874. Soybean micorosomal delta 15 desprings on ONA was used as a hybridization prober to avoided a gayastalight base used ONA from seyboar Planmid pXP1 was Essent was also used. The identity of the expression product of pCF3 is the Archidegers microsomal delta 15 deservation was confirmed by its blological overexpression in plant tissues. Conserved regions of hybridization prote. One of the sequencing primers made to the fragment containing wild-type genomic DNA as a radiolabeled pCF3 was isolated from a cDNA library using a 5 2 kb Hind III N-PSDH; Q43Z08. WPI; 43-197063/24. (DUPO) DU PONT LE NEMOURS & CO E I. 04 DFC 1991; US £04259. 10-JUN: 1993. 204 POSEACHHEMANTENERRIGHTSTAACHAVOYOUR 263 VAGE DVII CYDQH-THES DEHYDS SEMDMINGALATVURDYGIINKVEHNITDYHVAHH 320 tymwldlwtylhhhghedklpwyrgkewsylrggl++ldrdygwinnibidi gthvihh 378 261 paktasilidesedilimenerkdir itstacmaamlallivalatimageiqliklygipyvi 319 145 HSWINSCHAUDEN VERRAGDER WEGEN LANGELANDER VON LANGE VERRAG VERSCHEIT 203 211 hqhhghaendes⊮hpl 151 vwplywaaggtmtwalfvlghdcghgsfsnoskinsvvghlibss;lvpyhdwrishrth 210 98 85 AWPLYWACQGCVLTGVWVIAHECGHHAFSDTQWLDDTVGLIFHSFLLVFTFSWKYSHRRH 144 25 POETPTETVGELEKAIPPHOFKRSIPRSFSTLIWDIIIASCFTTVATTTFTLLEHILGTF 84 382 encode the putative plasted transit peptide, pgapppfnladiraaipkhowekdpwrsmsyeerdvi-av-fglaaaaay: -l-n nwl 150 23.5%; Similarity 39.3%; 453 AA; pe klf rsldt-vtrmlrttaptpilafpvyl f. s-rs- 260 Score 711; EB 7; Tangth 452; Prod. No. 9.076-55; Td; Indels 73; ITTAAASLADAMSVALSAAVA. colinear with sdep

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379 lipqiphyhlvestelikpvigkyyr 404

321 LESTMPHYHAMEATKAIKPILGEYYQ 346

R37591 standard; Protein; 378 AA

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pdf3 was isolated from a cown library using a 5.2 kb Hind III fragment containing wild type genumi. BMA as a radi labeled hybridization probe, how of the sespectaring primers made to the pdf3 misert was also used. The identity of the expression product of pdf3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Specific polypeptide
Disclosure; Page 136-138; 165pg; Findiash.
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บ4-DEC-1991; ปี2-สา4259
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231 mqmlklyvipywinumwldfvtyllhhatodklpwyngkowaylrgglbtldrdyglinn 290
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291 ihhdi gthvilhlifpqiphyhlveateaakpvlgkyyr 328

308 VEHNITDTHVAHHLESTMEHTHAMEATKAIKELLGETTQ 346 380 AA

R37595 standard; Protein; Glycine max, clone pXF1. nl-orr-1993 (first entry) 1 m-.111N-1 493. Lipid composition; modulication; fatty and desatutuse, chayme. Comparison of mintranest doltalls design uses. R37545;

WPI; 93-197063/24. Yadav NS (BUPO) BU PONT LE NEMOURS & CO E 1. 04-DEC-1991; US-F04259. Grau LP, Kinney AJ, Pierce JW, Wierzbicki AM

insert was about each The adeptity of the expression product of pOF3 as the Arabidage as made and SH1 als designation of the behavioral event expression in particular as the Comparison of ROMEGO are useful in descipting long obligates for the Euclidean as well as shorter does for one as primers in the COF. The exquences of useful regions are given in Q43213 Q43224. Arabidage a delta-15 Trayment containing wild type genomic DNA as a radiolabeled byte (1994) by the problem of the sequencing primers much to the pOP3 Isolated nucleic acid fragment, for plant lipid company modification communisms nucleic acid acquence encoding tatty acid desaturase or related enzyme with high aminoacid convirty to desaturase cDNA was used as a hybridization probe to isolate a glycerolipid desaturase cDNA from soybean. Flasmid pXF1 was specific polypeptide Disclosure: Eage 144-146; 167gp, English. goP3 was implated from a dDNA library uning a 5.2 kb Hind III N PSDB; Q43207.

Query Match Bost Local Similarity 39.6%; Matches 129; Conservative Sequence 129; Conservative 74; Mismatched 100; Indoh 33; Caps 19; 380 AA; grore 705; DB 7;
Pred. No. 3.40e-54; Length 380;

deposited under ATCC 68874.

DЬ ... [87] F. G. G. B. Charle, and G. F. F. Warder, and S. F. Warder, and G. Warder, and G. F. Warder, and G. Warder, and G. F. Warder, and G. Warder, an 18 wliyepiqgrmflalfvlghdeghgsfsdspilnslvghilhssilvpyhgwrishrth 139

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R37593 stundard; Protein; 446 AA 01-0CT-1993 (first entry) R37543;

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Arabidopsis thalland, close pACF2-2. Sequence of a plastid delta 15 fatty and desaturase.

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04-DEC-1991; US-804259. 03-DEC-1992; 010284. (DUPO) DU PONT DE NEMOURS & CO E I.

WPI; 93 197063/24. Yadav NS; Browse J, Glau JP, Kittley AJ, Fletce JW, Wietzbicki AM,

teolated models and fragment, to plant light compan-modification—comprises made no and sequence exceding tarty

N-PSDB; Q43204.

specific polypeptide
Elschourt, For 132-134; 167pp; English. acid desaturase or related enzyme with high aminoucid identity to

hybridization probations of the sequencing primary made to the pCE3 laser than all made. The identity of the expression is 10000 fCE3 as the Archity of materials do to 15 departures was continued by its bid just consequence in the just its section. The model is the section of the pCE3 are applied to the green in the just it is section. pOPR was isolated from a cDNA library using a 5.2 kb Hind III fragment contain ng wild type genomic DNA os a radiolabeled

well as above one's for use as primers in the PCB. The sequences of useful represente given in Q42212 Q42224. In this to the case for the expression of the piece exacting (SECT22), the SEMA curresponding to Q42204 is about and in green Calcara, the in Pots and Loaves, and is about three-fold more abundant in contribution that CA22222 SECTED and SECTED show and contribution of the that the Q422222 SECTED and SECTED show and contribution of the that the Q422222 SECTED and SECTED show and contribution of the that the Q422222 SECTED and SECTED show and contribution of the that the Q422222 SECTED and SECTED show and contribution of the that the third shows a section of the section of the third shows a section of the third shows a sectio Sequence 446 AV.;

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2 136 | 15 | 0w.0wg.jywl.oggtmfw.olfolgd.dgdpdfs.odgf.in.cogf.lite.cology/0.193 76 LIPHPLSYFAWLLYWALDGOVLIOVWVIAHEOGHRAFSDYDWIGDTVGGJERBELLVEYE 135

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05-FEB-1993; US-014431.
22-NOV-1993; US-156551
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                                                            linoleic acid desaturase, or the antisense of the coding
                                                                        content - conty recombinant, double stranded DNA encoding
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Arondel VJA, Gibson S1, Ershere GM,
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                                                                                                                                                                                                                                                                                               R60499 standard; Protein; 446 AA
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query Match
Rest Local Similarity 38.1%;
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 Source 703, DB 11; 12-mgth 446;
Prod. No. 5.27e-54;
77; Mismatches 109; Indels 20;
   Gaps
    16;
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The cDNA sequence and deduced amino acid sequence of linoleic-

acid-desaturase fadD of Arabidopsis are provided.

Disclosute; Page 75-77, 144pp; English.

sequence

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Release 2.15 Teks F. Collins, Bicompating Research Unit. Capacity (1914), 1949, 1948, University (Federland), U.E. That or but ion rights by intellibeneties, Inc.

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Scoring table: TABLE default Cap 6

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Database: embl-new3 1:BCT 2:FUN 2:CEN1 4:CEN2 5:HTG1 E:HTG2 7:HTW 8:INV 9:085 10.MAM 11:PMF 10:HTM 13:EE; 13:B05 15:CEN 14:CUC 17:VIE

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Dec 17 17:21

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Mean 11.102; Variance 4.531, scale 2.450

Statistics:

Find. You is the number of results predicted by chance to have a source greater than or pepual to the score of the result being printed, and is derived by analysis of the total score distribution.

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SOURCE

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Hirotaka lwakawa, Kyushu University, Facul. Science, Dept. Biology, Lab. Plant Physiology; 6-10-1 Hakozaki, Algashi ku, Fukucka, Fukucka 812, Japan (E mail:koibasch@mbex.nc.kyushu u.az.jp , Tel:002-64; 1101(-x.4414), Fuki002-632.2741) Submitted (6.5 brot 1994) to the IdBW/EMBL/GenBank databases

REFERENCE (bases 1 to 1515)

AUTHORS Iwakawa, H.

REFERENCE Jupublished (1934) (sites)

AUTHORS Horiguchi, G., Iwakawa, E., Kedama, H., Kawakami, N., Nishimura, M. and Iba, K.

Expression of a game for plustid emega-3 fatty acid desaturase and changes in ligid and fatty acid compositions in light, and

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S. KBBBBB Akagi, H. (tames 1 to 1208)

J.M.Seididd TITLE AUTHORS Hiroma i Akayi, Life Science Instituto, Missi Toutos Chemicals Inc., Plant Riothechnology, Topo 1144, McLara, Claba 297, Japan (E-mail:thirassw@niquts.nig.ac.jp, Tel:0475-25-6729, Fax:0475-25-6553) Direct Submission
Submitted (27 NOV 1945) to the SpaceBMRI/SonBack dutabases. ? (haser 1 to 1208)

AUTHORS

Akagi, H.

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Partial nucleotide sequence of a w-3 fatty acid desaturase cDNA

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Organisations (1994)

Bukaryotse, mitochondrial aukaryotes, Viridiplantae,

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Akagi H.;

Submitted (27-WSV-1995) to the EMSL/GetBank/SDBJ databases.

Hiromori Akagi, Life Science Institute, Mitsui Toatsa Chemicals Inc., Plant Bittheebnol.jy; Tige 1144, Mekara, Chika 297, Japan (E-mail) toiragaw@niguts cig.ac.jp, Tol:0475 25 6729,

Fax:0475 25-6553)

of tice"; "Partial nucleotide sequence of a w-3 fatty acid desaturase cDNA

/home/fuller/dec97/US-08-572-027A-7.rgc

SGD /product "w=3 fatty acid desaturase" /db_xref="PID:gl785856" /codon_start= /strain="Nipponbare" organism-"Oryza sativa"

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Best Local Similarity 67.9%; Pred. No. 3, 10e-11; Matches 74; Conservative 2. 0; Mismatches 35; Indels 0; Gaps ٥.

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7 61 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 1

Ş 356 ACGALACOGTOGGCCTCATCTICCACTULTICCTULTUGTECCTIACTICTULGGAAGT 415

DЬ 62 toayocacagawcacaccatragaaccacggtoatatogagagggacquille

Ş 416 ACAGTEATEGACGECACTACTICEAACACTGGCTCCCTCGAGAGAGAGACGA 464

SOURCE RESULT 11 KEYWORDS ACCESSION DEFINITION Sesamum indicum omega-3 fatty acid desaturase mRNA, nuclear yene ORGANISM encoding chloropias; protest, complete ods. U25817 Sesamun indicum Oriental sesame. g87078.) SIU25817 1622 bp PNA Ę 24-301-1995

.**.**. Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Eukaryotae; mito-hondrial aukaryotes; Viridiplantae; prologerda, Gentianahae, Shophalatiales, Gedalianeae, Sesamum. (basek 1 to 1622)

AUTHORS TITLE REFERENCE JOURNAL Umpublished complete cds Sesamum indicum chloroplast omega 3 fatty and desiturase mBNA,

Shoji, K.

Shoji, K. (bases 1 to 1622)

AUTHORS TITLE JOURNAL Submitted (27 ATE 1995) Kadauki Choji, Biotedhology westion, Tayama Agricultural Pescarch Center, 1124-1 Yoshioka, Toyama 939, Direct Submission

FEATURES urder Location/Qualifiers

/organism="Sesamum indicum" /note-"oriental sesame" /strain:"4294"

/codon_start=1 /product="cmega 2 fatty acid docaturase" 5..1348 /tissue_type-"cutyledon" /mote "limpleic acid and hexadecadiomnic acids /dev stage="seedling" desaturase"

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Patent: US 5569830 A 5 29 OCT 1996;
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EKSTLRELSYMENDUVVALAASALISENSMETWELTWEADGTMEWALEVLOHDOGHG
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RESULT

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DEFINITION Tobacco leaf mRNA for microsomal omega-3 fatty acid desaturase,

mRNA

OB-MAY 1446

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SOURCE KEYWORDS W.CESS ION

microsomal omega-3 fatty acid desaturase

g1311480 complete cds. TOBNITAD 3

Nicotraha tabacum (straintik-1) leaf chMA to mEMA,

ORGANISM

Nicotiana tabacum

clone_iib:lambda-gtli.

REFERENCE

Chariphyta/Embryiphyta group; Embryiphyta; Magnoliophyta; Magnoliophida; Sulamanae; Sulamales, Sulamaneae; Nicotiama. . (basos 1 to 1866)

Eukaryotae; mitochondrial eukaryotes; Viridiplantae;

AUTHORS

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Direct Submission Hamada, T

REFERENCE

JOURNAL AUTHORS

Unpublished (1994)

(sites)

Hamada, T

REFERENCE

(bases 1 to 1366)

Tatsurou Bumudu, Faculty of Science, Kyushu University, Department of Biology, 6-10-i Hakozaki, Higashi-ku, Fukuoka, Fukuoka 812, Japan (Tel:092-641:1181(ex.4414), Fax:092-632-2741)

Submitted (13-JAN-1994) to the DDBJ/EMBL/GenBank databases.

ORIGIN

Matches Query Match

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Score 33; DB 68; Length 1366; Field Mac 1.614-66;

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Release 2.10 July E. 7.1115., 81 Negriby Fescalt Coft. Copyright (c) 1993, 1994, 1995 University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc.

MPsrch_pp protein · protein database search, using Smith-Waterman algorithm

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Statustics: Mean 25,207; Variance 157,289; scale 0.230

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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A court the modern and electry is 40% or project to	prepared to the entry of the prepared on the prepared of the p	with radiciaheled pSE2b cDNA insert. The phasemid decired from	With library made with poly A+ mRMA from developing B. napus seeds	The defic corresponse was isolated by screening lambda phage	Claim 13; Fage 116 118; 147up; English.		Cepes for failty and desafurase endyment (ermit alteration of	2-P303; @360363.	WPI; 94-183515/22.	Lightner JE, Okuley JJ;	(DUPO) DU PONT DE NEMOURS & CO E I.	17-NOV-1992; US:977339.	15-00T-1993; H09987.	26-MAY-1994.	WO 9411516-A.	Brassica napus.	Fitty wold; desitorase; light; prestorated; transport plant.	CF2-165d.	Sommore of microsomal delta 12 desitaries deduced (res SDWA is plasmid	09-NOV-1994 (first entry)	R53698;	R53698 standard; Protein; 383 AA.	J.L.T.

d of more AAs; designed degenerate clips hashed on the offsetted sequences; and using the clipse to isolated sequences concling faity

fatty acid desaturase sequences; identifying conserved sequences of

encoding fatty wold desabliaces and related encymes is claimed which complises comparing the sequence in PERSON PROPERTY and error Q66069 is claimed. A method to isolate puchelo acid fragments

Kappa fatty acid hydroxylase; lesquerolic acid; transgenic pl cllsood; sood sil; raposood; Crambe; Brassica junceu; canola;

plant;

Kappa fatty acid hydroxylase pLesq-HYD.

sunflower; safflower; cotton; caphea; scylean; pearut; coconut;

26-SEP-1994; US-314596.

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Local Similarity 89.3%;
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                                                                                                                                                                                                                                                                                                                                                                                           KECIYVEPDROGEKKEVEWYNKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DYGILMKVFHNITDTHVAHHLFSTMFHYHAMEATKAIKFILGEYYQLHGTPVVKAMWRFA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YRYAAVQOVASMVCFYGVFLLLIMIGELVLITTLQHTHPSLPHYDSSBWDWLRGALATVDR
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                                                                                                                                                                                                                                                                                                                                                                                                                  383 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21; Mismatches 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 2735; DR 10;
Pred. No. 3.74e 253;
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plant lipid composition Claim 13; Page 120 122;

N-PSDB; Q66070. WP1; 94-183515/22.

Okuley JJ;

or fatty acid desaturase enzymes— permit alteration

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Claim 1; Page 6k-k4; imppy English sunflewer or cetten, cents, a fatty acid hydreaylase gene acid - in genetically modified plants such as tapeoeed, flax, Prodm. of hydroxylated fatty acids, e.g micinoleic or lesquerelic N-PSDB; T27011. WPI; 96-200914/20. Broun P, Somerville C, Van De Loo EU;

Ş 망 ۶. Ž 2 2 .7 Ź 7 . ;; 4 11 Overy March 69.5%; Best Level Similarity 70.3%; Marches 267; Conservative Claim 13) Page 120-122; 147pp; English. The gene correspond to \$66.78 was identified by settleming landed phage CDA (Lary or be with \$15 y Ar mBDA from developing cryteria sends with radialized at \$2021 The phagemid decision from phagemid decision from \$40.95 (948, decignated \$122 1448, was sequenced (9460176) Plasmid \$222 1498 was deposited on outster 14, 1992 with the Affect and bears recession number Affect 62.32. As identified on nucleic acid fragment enoyding fatty anid desaturases and related enzymes is claimed which comprises: comparing AA sequences in ROSEUT BESSOS and other tatty anid desaturase sequences; identifying connected sequences: 4 or more AAs; designed degenerate oftens based on the conserved arid desaturases and desaturase related enzymes. whosein the number and identity is 40% or greater to 239 attkylowilenygypiliwngflotitylahthfalphydssowdwikgulatodrdyg 264 TAARLUBBÖGEKKOALMANNE 359 lyvopdegtsekgvywyrnk 378 190 td 10 jwgmylafnysgrpyds fashyhgyapiysnrotlliyysdvalfsvtyslyrv 238
1 :1:|||:|||:|||||||||||| CARA CARTO DE LECARROS DE LO CIRA DEFENAN LESTABLICACIONACIONATO SONTE DA V 64 OCE EDVATO ER LLE HELDEREM DVMS QUI POTOWOLAHE I RIBARCO VÇMI FOTO I 123 61 t afylattyfbllpgrfaliawplywvlggalltgrwviahoagbbafskygwrddvvg 119 THE STATE OF THE S r o jjigivakvevjjikg lsivgitlggffrjglikbjggbofgrolltsfsywydisfa is elapsed. A method to isolate combein acid tragments 379 AA; 383 Score 2105; NB 10; Pred. No. 6.07e-191; 53; Mismatches 57; ienijih kilaj Indeks);

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Sequence of corn microsomal delta-12 desaturase deduced from cDNA in plasmid pFad2 1.
                                                                                E53730 Standard; Frotein;
W09411516-A.
                    Fatty acid; desaturase; lipid;
                                                                         R53700;
           Zea mays.
                                                           09-NOV 1994 (first entry)
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387 AA.

unsaturated; transpenio

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fatty acid desitation sequences, identifying conserved sequences of documente AAS; designed dependences, illiques based on the conserved sequences; and using the oliques to involuted sequences encoding fatty
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q66071 is claimed. A method to isolate nucleic acid fragments encoding fatty acid desaturuses and related encymes is claimed which compiles: I impacts AA unpublication in 978607 97370 and other which compiles:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               product of 720bp was purified and used as a probe for screening the curn CDNA library. A player was purified and found to encode microsomal delta-12 desaturase truncated at the 3° end. This cDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sense and antisense primers, respectively. N33 and RBSA/B corresponding stretches of AAs 101 109 and 318-326, respectively, of RSA697, which are conserved in most microsomal delta-12 desaturases. A FCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Corn microsomal delta-12 desaturase cDNA was isolated using a FCR approach. A cDNA library was made to poly A+ mRNA from developing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 the longest insert, designated pFad2 1 was sequenced completely
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       was used to probed the corn cDNA library again. The clone contq.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       of degnerate oligos NS3 (QK6075) and RRSAZR (QK6077,QK6078) as
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               corn embryos. This library was used as template for PCR using sets
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 94-183515/22.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   acid desaturases and desaturase related enzymes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              wherein the nucleic acid identity is ^{408} or greater
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Q66071). An isolated nucleic acid fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Claim 13; Page 124 126; 147pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Lightner JE, Okuley JJ;
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                                                                                                                                                                                                        240 LYRYAAVQGVASMVCEYCVELLIVNGELVLITYLQHTHESLEHYDSSEWEWLBGALATVD 244
                                                                                                                                                                                                                                                                                                        180 VMLTVQFTLGMPLYLARNVOGREYYSSSCHACHSHVMAFIYNDRERLQIYISDAGILAVCYC 239
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         127 vvglvlhsslmvpyfswkyshrrhhsntgslerdevfvpkkkealpwytpyvynnpvgrv 186
  360 AKECIYVEPDRQGEKKGVFWYNNKL 384
                                             366 ageciyvepe --drkgvfwynkkf 387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Match 66.7%;
Local Similarity 69.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 IIASCFYYVATTYFPLLPHPLSYFAWPLYWACQGCVLTGVWVIAHKCGHHAFSDYGWLDD 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 MCAGGRMQVSPPSKASETUNIKEVISSISTETISSELKKAIFTEGEKKSIPRSESYLIWSI 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ? mtekerekgeglaratgyaamgrspvekppftlggikkaipphofersvlksfsyvvhdl 66
                                                                                                  RDYGILNKVFHNITDTHVAHHLESTMPHYHAMEATKAIKPILGEYYQLHGTPVVKAMWRE 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for fatty acid desaturase enzymes - permit alteration of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      266; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           387 AA;
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Pros. No. 1.440 180;
46; Miematches 68; Indels 5; Caps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restor tweams (stages IV-V, 20-25 DA) was screamed. Redicated prock proper (som pSEN) or pRE2 10 were added and allowed to hybridise. Three of the strongly bybridisting players and three of the weakly bybridisting players were particled. The coertis were sequenced and the series sequenced and the series sequenced and the series of plasmid persons 40 is given in 26000 An is that combon sold fragment wherein the number acciding the process of the series of the s
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(HHPO) THE FORT DE NEMOURS 4 CO E
Light nor JE, Okaley JJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           and related engymes is elaimed which comprises comparing AA sequences;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A cDNA library made to poly A+ mRNA isolated from developing
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       desaturase-related enzymes.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 13; Page 131-133; 147pp; English.
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as fatty acid desaturase encymes— permit olteration of
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180 phydssewdwlrgalatvdrdygilnkvfhnitdtqvahhlf-tmp 224

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301 DYGILNKVERNITDTHVAHHLESTMEHYHAMEATKAIKEILGETTQ 346

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281 PHYSSSWEWLEGALATVSRSYGILMEVFHATTSTHVAHHLESTAS 326

Ŷ Ş В Ş 9 Qγ Зb 문 ;; Χ. ---3 Query Match 26.0%; B-st issual Similarity 39.6%; Matthew 137; Conservation pCF3 was idealized from a cDNA library using a 5.2 kb Hind III trapped to obtaining will type genemic DNA as a radiolabeled by the library in the sequence of primers made to the pCF3 insert was also used. The ideality of the expression are gradied at pCF3 as the Arabidage's micross mail delta for the sequence was confirmed by its thickness everyway regions. The plant tissues was confirmed by its thickness everyway regions of payment are useful in designing long oligomers for bybriding from as well as shorter ones for use as primers in the DCR. The sequences of useful regions are given in QA 2013 QA 2024. 30 Jan 1. 1. 1. R37592 standard; Protein; 386 Specific polypoptide Specific polypoptide 127 129; 167pp; English. modification - comprises madhele acid sequence encoding fatty (DUPO) DU PONT DE NEMOURS & CO E I. Browse J., Grau LP, Kinney AJ, Pierce JW, Wierzbicki AM, 03 DEC-1992; 010284. 04-DEC-1991; US-804259. hipid composition; modification; farty acid desaturase; enzyme. Sequence of delta-15 desaturase. 01 OCT-1993 (first entry) R37592; acid desaturase or related enzyme with high aminoacid identity to isolated nucleic acid fragment, for plant lipid compan. N-PSDR; Q43202. WP1; 93-197063/24. Yadav NS; 10 - HIN - 1993. Ambidopsis thallars, close pope. 185 230 lsfvfqplavlkvygvpyiiivmwldavtylhhhqhdeklpwyrgkewsylrgglttidr 176 plpmlayplyylcyrspqk--eg-s-hfnpycelfapserklivatsttcwsimfvslia 125 TERSELLVEYESMKYSHRRHHSNTCSTERDEVEVEKKKSDIRWYGKYINNELGPTVMLTV 184 243 YAAVQGVASMYGFYGVPILIVHGFLVLITYIQH THPS LPHYDSSEWOWLBGALATVDR 65 CEYYVATTYEPLLEHPLSYFAWPLYWACOCCVLTOVWVIAHKCCHHAFSDYQWIDDTVGL 124 68 ula iauwy - v d -swilwplywuuqgtlfwaifvlghdogbgeisdipllnesvegh 120 6 AMQUSTFORWARTER THAT HE HELD HELD THE HELD THE HELD TO THE HELD TO THE HELD TO THE HELD THE HELD TO dygifnnihhdi-gthvihhlfpqiphyhlvdatkaakhvlgryyr 334 QFT-LGWPLYLAFNVSGRFYDGGFACHFHPNAPTYNDREKLQIYISDAGILAVCY-GLYR 386 AA; Soute (87) DR 3; Langth (86) Field No. 3.87e 62; 74; Mismatthes (11) (1.56)s (24) (Sigs (8) 64

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Q71204-09, and used to screen YAY libraries. The fad3 game was
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                                           R37596 standard; Protein; 453 AA
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transgenic plant; crop improvement; yeast artificial chromosomo;
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Sequence 383 AA;
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Local Similarity 40.83; Frod Mo. 1570-60; Local State
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(DUPO) DU FONT DE NEMOURS & Co.E.I.
Browse J. Grau LD. Kinney AJ. Pierce JW. Wierzbicki AM.
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Lipid composition, modification, fatty unlindesaturase, entyme.
Brassina napus, olane pBMCP1 ti
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                                                    Caste 700; SR 7; Grigth 878;
Pred. Mo. 8.51e 54;
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HESULT HESULT RESULT RE R60499; R60499 standard; Frotein; 446 AA Linoleic-acid-desaturase tadD 28-MAR-1995 (first entry)

Arabidopsis. linolenic acid. lineleic-acid-desaturase; indb, transpense plant; erop improvement;

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18-AUG-1994.

04-FEB-1994; U01321. 05-FEB 1993; US-014431. 22-NOV-1993; US-156551. (MONS) MONSANTO CO.

N-PSDB; Q71210. (UNMS) UNIV MICHIGAN STATE.
Atondel VAA, Gibson SI, Kishore GM, WPI; 94.279758/34. Buff TG, Somerville CR;

content - conty recombinant, double stranded DNA encoding lincleic acid desaturase, or the antisense of the coding sequence Genetically transformed plants with altered linolenic acid

Disclosure; Page 75-77; 144pp; English. The cDNA sequence and deduced amino acid sequence of linoleic-acid-desaturase tadD of Arabidopsis are provided. 446 AA;

Best Query Match Matches 127; Conservative 76; Mismatches 110; Indels 20; Gaps 16; y Match 23.0%; Local Similarity 38.1%; 81 eednkqrfdpgapppfnladiraaipkhcwvknpwkslsyvvrdvaiv--falaagaay- 137 Score 647; DR 11; Length 446; Bred. No. 1.65e-53;

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Brassica juncea

delta-iz desaturase; cleate desaturase

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REFERENCE ALLHORS Gadea, J., Mayda, M.E., Comejero, V pacobetateon. (bases 1 to 1170) and Vera,P.

TITLE JOURNAI Characterization of defense related genes ectopically expressed virold inferted tempto plants Mol. Plant Microbe Interact. 9 (5), 404-415 (1946)

REFERENCE MFDLINE Vera, P. 96252900 (bases 1 to 1170)

AUTHORS TITLE JUMBNAL Direct Submission

Valencia, Inst. de Biologia Molecular y Celular de Plantas, Camino Submitted (10-JAN 1446) F. Vera, Briversudad Faliterrica de With 14, F. 46022 Valencia, SPAIN

FEATURES SQJ source FERCUARDESE LIGOLI IAY FEYY IANTYTHILI STEYRYWWTTYW IAQGOVCTGIWV Tompodrisio Qwydidi voli iaboa ilteyfawrhoiar bhantoleadeli yipr /product="lipid desaturaso-like /db xref="![[::0]18583" /db xref="PID:gl161568" Location/Qualifiers /gene="cevil9" 67...1068 /tissue_type="leaf" /cultivar="Rutgers" /codon_start=1 /organism="Lycopersicon 1..1170 "MODIFICANCIANT SOCIETA DECEMBER OF THE CONTRACTOR OF THE CONTRACT escuientum"

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KEYWORDS ACCESSION DEFINITION TaFAD7; plastid omega 3 tatty acid desaturase. Triticum aestivum (strainiev. Chihoku) leaf cDNA to mRNA, g1694614 Wheat mRNA for plastid omegan? fatty acid desaturase, partial ods. D43688 1515 bp mRNA 27 NOV 1996

ORGANISM Triticum aestivum clone_lib:lambda-gtll. SOURCE

Charophyta/Embiguphyta gruup, Embiguphyta, Magnoliuphyta, biliopsida, Poalos, Poacoao, Tririoum Eukaryotae; mitochoodrial eakaryotes; Vizidiplantae;

REFERENCE (bases 1 to 1515)

AUTHORS lwakawa, H.

TAMBION TITLE Hirotaka Iwakawa, Kyuchu University, Farul Science, Dept. Biology, Lab. Plant Physiclegy, 6 10 1 Hakezaki, Higashi ku, Fakuski, Fukuska 812, Japan (E mallithikashimkashi, kutikushi a.ai); , Teli992 641 1101(ex.4414), Faxi992 632 2741)

(Kasus 1 1.1115) Direct Submission Submitted (03 DEC-1994) to the DDBJ/EMBL/GenBank databases

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REFERENCE JOURNAL AUTHORS Unpublished (1994) iwakawa, H. (sites)

TITLE AUTHORE Expression of a gene in plantil Top 3 into wind design and a charge in light of they and expression in high and a charge in the control of th Hirriganthi, G., Iwakawa, H., Erdera, H., Bawakari, H., Washimera, M. Iba, K.

dark-grown wheat leaves

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EEATURES Journal Physici. Flant. 96, 275-283 (1996) /strain-"cv. Chihoku" /clone_lib:"lambda-gtll" /organism-"Triticum aestivum" Location/Qualifiers

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REFERENCE TITLE AUTHORS Tatsurou Hamada, Faculty of Science, Kyushu University, Department of Biofryy, 6-10 l Hukocyki, Higaski ka, Pakaoka, Pakaoka 812, 1997 (P.11920 (41.110) (p.1414), Procedure 620-274)) Direct Submission

CHEFFOR (13 MAI 1994) to the DDB FRMBL FARBOR databases. Hamada,T (bases 1 to 1366)

REFERENCE

(bases 1 to 1366)

REFERENCE

JOURNAL AUTHORS

Unpublished (1994) Hamada, T

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AUTHORS

Hamada, T., Koduma, H., Nishimura, M. and Iba, K. Cloning of a CRN we object toberon common 1 (atty acid deserter accommon 147 (2), 293-294 (1994)

COMMENT

Submitted (13-Jan-1994) to DDBJ by:

MEDLINE

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FEATURES

Location/Qualitiers

Kyusyu University Department of Biology

Faculty of Science Tatsurou Hamada

Fukuoka, Fukuoka 812 6-10-1 Hakozaki, Higashi ku

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Unpublished.

Soqueton updarnik (Un Jan 1997) by: Hiromori Akagi

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*Partial nucleotide sequence of a w-3 fatty acid desaturase cDNA

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Charoghyta/Embryophyta group; Embryophyta; Magnoliceshyfa; Magnolices da; Solanasue; Solanales; Solanamose; Solana

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BASE COUNT Query Match 30.5%; Goore 352; PB 67; Best Local Similarity 67.8%; Pred. No. 0.00e+00; . J. 500 420 3 523 660 9 445 54 i) 480 325 595 136 183 6.67 ند: اکا 360 tattgggtteteeaaggttgeetteteactggtgtgtgtggggtgaftgotoacgagtgtggg 300 145 242 etectroattoattoatota (figure 200) - 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 11 ŝ tocaagtacttaaacaachototoggungggorgttotottotoglogopotogopata 600 caccat geet to age and the card gogst the grid of the grid gogst the grown to some of 479 and the grid that the sound of t tetgatgttgetttgttttetgtgaettaetetetetaeegtgttgeaaceetgaangg 836 CALLIS MALLES LAW LELY WELL OF THE PERFORMANCE TO T GCCTCCCTCGACACACACSACSAACTCCTTCTCCCCAACAAGAAGCAAGAAGCATCAAGTGGTAC ggttocottgacogtgatgaugtgtttgtoccaaaaccaaaatccaaagttgcatggtff 500 PROCEECTION OF THE PROPERTY OF acacttttagtoccttatttctcutggaaaataagchatngnngnnathantnnaanana 530 ATCCCTCCCTCTTTCTCCTACCTCATCTGGGGACATCATGATATGATCTCTCTTCTACTAC Torosponentia esperante de la reposita della reposita della reposita della reposita de la reposita della reposi gggtggcctatgtatttagccttcaatgtctctggtagaccctutgutagtt--ttgcaa 717 726; Conservative site ري د ز ر ú 1453 EATNATED LIGHT 124 OF FRATMERABET LIVEPTE TERTVENKY" OHTHEALEHYDSSEMUMIA GALATMURDYGI INK VEHHI TECHVAHHILKSIMFKKAM OHTHEALEHYDSSEMUMIA GALATMURDYGI INK VEHHI TECHVAHHILKSIMFKKAM EALKEK KAME EKA TIME TOBVARTTALI OMENA TVERMACUELA BOLI HALI AR HALI BARANCUELA BOLI BARANCUELA BAR GVWVIAHECGHHAESKYQWVDDVVGLTLHSTLLVPYESWKISHRRHHSNTGSLDRDEV IPPHOPQRSLL1sesyvvirliseapieylapieehlleqpesiiawpiiwviqooiii /translation="MGLAKETIMGGRGKVAKVEVQGK&&ESkVFNTKFFFTVGGERKA 'db xref-"P1D:g904152" 332 C or Mismithes 224; Indels 6; Open 306 g = 442 + Longth 1453;

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ORGANISM

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REFERENCE (bases 1 to 1515)

AUTHORS Iwakawa, H.

JOURNAL Direct Submission (03-DBC-1994) to the PDB-7FMRL/GooBlack dutabases.

Hirotaku Iwakuwu, Kyushu Unibensity, Fudul Colence, Dept. Bilkayy Lab. Plant Physiologyy 6-10 1 Hakozaki, Higashi-ku, Fukuoka, Fukuoka 812, Japan (E mailikoibuodh@mben.nu.kyushu u.uo.jp., Tel:092 641 1131(ex.4414), Fax:092 622 2741)

REFERENCE (bases 1 to 1515)

AUTHORS Iwakawa, H.

REFERENCE JOURNA! Unpublished (1994) (sites)

AUTHORS Horiguehi, G., Iwahawa, H., Kedama, H., Kawahami, N., Nishimura, M. and Iba, k.

Expression of a gene for plastid omega 3 fatty acid decorouse changes in light and fatty and compositions in light and

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KEYWORDS RUSTROE Nichtian; tabanum (strain:SR 1) leaf cDNA to mRNA, Plons_11b:1umbda gtil microsomal omega-3 fatty acid desaturase.

ORGANISM Nicotiana tabacum Pakaryotas, mitochoodrial eskaryotes, Viridoplastas;

Magnoliopsida; Char-phyta/Embry-phyta greep, Embryophyta; Magnoliophyta; Magnoliopsida; Sulananae; Sulanales, Sulanaceau; Nicotiana. (bases 1 to 1366)

REFERENCE AUTHORS Hamada, T

JOURNA! Direct Submission
Submitted (13 JAN 1994) to the DSBC/FMSC/ScoBack databases.
Talsured Bamada, Faculty of Scorery, Kyusho Provincity, Repartment of Buckley, 6 10 1 Bahadaki, Bigashi k., Filabo, Filabo, 912, 19ps. (761) 94 641-1101 (ex.4414), Fax:897-632-2741)

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COMMENT

Submitted (13-Jan-1994) to DDBJ by:

MEDLINE JOURNAL AUTHORS JOURNAL AUTHORS

Cloring of a cDNA encoding tobacco omega-3 fatty and decatation Gene 147 (2), 293-294 (1994)

Hamada, T., Kodama, H., Nishamura, M. and Iba, K

REFERENCE TITLE

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Asometr, A., Labavitch, J.M., Fewell, A. and Stotz, H.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1208 (4); 204 A; 204 C; 283 C; 307 C; finance;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             416 A. ACTOROGO ACTOROGO AND ACTOROGO ACTOROGO ACTOROGO A 464
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Rice mRMA for w-3 fatty acid desaturase, partial cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hiromori Akagi, Lite Science Institute, Mitsui Toatsu Chemicals
Inc., Plant Biothechnology; Togo 1144, Mobara, Chiba 207, Japan
(E-mail:tniras:w@niguts.nig.us.jp, Tel:0479 25 6729,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence updated (20 Jan 1997) by: Hisemoti Akayi.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished (1996)
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KLYWQLETRTKKLHFTLFFTSLAFFWYRGPGKTGCHHLESSELL"SEKIKGRVIVSTTC
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Query Mutati

Carro 33,

:03 HG

Length 1353;

Best Local Similarity 57.7%; Fred. No. 8.35e-07;

Matches 124; Conservative

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Submitted (23 GCT 1996) Biochemistry, Max Flanck Institut t.
Zuchtungsforschung, Carl von-Linne Weg 10, Koln, NBM 58829, Germany
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    (bases 1 to 1886)
    Kirsch, C., Takamiya Wik, M., Bertrold, S., Hahlbrock, K. and

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Magneliopsida, Cornanae; Arabiales; Apradoae; Petroselinum,
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Statistics: Mean 11.101; Variance 4.537; scale 2.44/

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Camberra ACT 2601, Division of Plant Industry, AUSTPALIA
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SOURCE OPCAN ISM tomato. Lycopersicon esculentum

Lycopersicon. Charophyta/Embryophyta group; Embryophyta, Magnoliophyta; Magnoliopsida; Solamanae; Solamales; Solama-eae; Solamum Eukaryotae; mitochondrial eukaryotes; Viridiplantae; clade;

(bases 1 to 1170)

REFERENCE TITLE VILLHUES Characterization of defense-related genes with viroid-infected temato plants Mol. Plant Microbe Interact. 9 (5), 409 415 Nadea, J., Mayda, M.E., Conejero, V. and Vera, P The strain of the said

REFERENCE AUTHORS JOURNAL MEDIINE Vera, P (bases 1 to 1170)

TITLE JOHNAL Valencia, Inst. de Biologia Molecular y Celular de Flantas, Camino Submitted (10:JAN 1996) P. Vera, Murversidad Politectica de Direct Submission de Vera 14, E- 46022 Valencia, SPAIN

FEATURES Southers 175 /db_xref="PID:g1161568" /translation="MGGGGMCAMTSKARGERMELERUPE STEEPER CONGGRAIPPHC FERSIANSESELIQUUILVITE ETTANITIELLE ET FANTANITIMAGGGGGTGIMU /tissue_type:"leaf" 67..1068 /product-"lipid desaturase-like protein" /db_xr+f."PID:+218583" /codon_start=1 /gene="cevil9" /cultivar="Rutgers" /organism: "Lycopersicon esculent 1...1170 Location/Qualifiers

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ACCESSION DEFINITION Wheat mRNA for plastid omega-3 tatty acid desaturase, partial cds. D43688 D43688 1515 bp 1000

KEYWORDS g1694614

SOURCE Triticum aestivum (strain:cv. Chihoku) leaf cDNA to mRNA, TaFAD7; plastid omega-3 fotty acid desaturase

ORGANISM clone_lib:lambda-gtll.

Eukaryotae, mitochondrial eukaryotes; Vizidiplantae; Charophyta/Embryophyta group; Embryophyta; Magnetiophyta; Liliopsida, Seales; Searear; Triticum. Triticum aestivum

REFERENCE Liliopsida, Frairs; 1 (bases 1 to 1515)

TITE AUTHORS Iwakawa, H.

JOURNAL Hirotaka Iwakawa, Kyushu University, Fabal. Sdienbe, Bept. Biology, Dab. Plant Physiology; 6 10:1 Hikhopk, Bljushisku, Eukush, Fukuoka 812, dapan (B-mailikoibasob@mbox.no.kyushu-usarijo, Telinuz 64, linipus 4414), Eukuruz 63 7341) Submitted (03-DEC-1994) to the DDBJ/EMBL/GesBank databases Direct Submission

REFERENCE AUTHORS Iwakawa, H. (bases 1 to 1515)

KET EKENCE JOURNAL AUTHORS Histogradia, I., Charlesta, H., Elskama, H., Harris Hi, M., Wolling Co. W. 1818 Unpublished (1994) Iba, K. 3 (sites)

Expression of a gene for plastid omega-3 fatty acid desaturase and changes in lipid and fatty acid compositions in light, and

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SOURCE KEYWORDS 소중하러선 Velegaton 201111101 AUTHORS ORCANISM Oryza sativa TITLE AUTHORS RICPAIL 1208 bp mRNA PEN 20-JAN-1997 Ribe mRNA for w.2 futty addd deguturano, purfful ods. Akagi,H. (E-mailithnrasaw@niquts.nig.ac.jp, Tel:0475-25-6729, Fax:0475-25-6553) Hiromori Akagi, Life Science Institute, Mitsui Toatsu Chemicals L., Plant Birthe-buellegy; Tego 1144, V-toro, Chita 297, Japan Submitted (27-NOV-1995) to the DDBJ/FMBI/GenBank databases. Akagi,H. Eukarystasy mitoshoodrial eukarystes; Vnidiplantae; "bar pkytoffabry skyto jr up; Enbycphyto; Voinflorfyro; Edliopsida; Poales; Poaceae; Oryza. Oryza sativa (strain Nipponbare) cDNA to mBNA, close pAl-1. g1785855 D78505 Direct Submission w-3 fatty acid desaturase (bases 1 to 1208) (bases 1 to 1208)

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Matches Query Match 3.4%; Best Local Similarity 67.4%; Query Match 74; Commentative Score 19; DR 65; Length 1208; Pred. No. 3 23e 11; 0; Mismatches 3%; Indels 0;

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RESULT OSPALL standard; BMA; PLM;

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13-MAP-1997 (Bel. 51, Last updated, Version 4) Rice mRNA for w-3 fatty acid desaturase, partial cds. 05-050-1995 (Rel. 46, Created)

Oryza sativa (rice) w-3 fatty acid desaturase.

Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Eukaryotae; mitochondriai eukaryotes; Viridiplumtäe,

Liliopsida; Poales; Poaceae; Oryza.

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Akagi H.;

PRESERVE PRESERVE OCCORDENCE PRESERVE P Hiromori Akagi, bife Science Hastilate, Mitsui Tiatsa Chemists Inc., Plant Biothechnology; Togo 1144, M.kara, Clika 297, 'nga (E-mail:tnirasaw@niguts.nig.ac.jp, Tel:0475-25-6729, Submitted (27-NOV-1995) to the EMBL/GambBank/SDBN databases Fax:0475-25-6553)

of rice"; Unpublished. Akagi H.; *Faitial nucleotide sequence of a w 3 fatty acid desaturase .-1208

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SOURCE KEYWORDS Nucheiton ORGANISM Sesumem indicum omega 3 fatty acid desaturase mPNA, ruchear gene our-ding distription probably complete cds. pr5817 Sesamum indicum Oriental sesame. g870783 Fukaryotae; mitochondrial eukaryotes; Viridiplantae;

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REFERENCE AUTHORS Magnoliopsida; Gentrananae; Scrophulatiales; Péduliacéae; Sesamum Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; (bases 1 to 1622)

TITLE Shoji,K. Sesamum indicum chleroplast omega-3 fatty acid desaturase mRNA, complete cds

REFERENCE JOURNAL Unpublished (bases 1 to 1622)

AUTHORS Shoji, K. Sirest Submission

CEPT* J (27 APP 1995) Karuski Obeji, Birtarbachagi somion, "oyama Agricultural Posaurch Courter, 1124 I Yoshicka, Toyama 439,

FEATURES

80W) CE /strain="4294" Location/Qualifiers /orqanism="Sesamum indicum"

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/dev_stage="seedling"

/codon_start:1 /product="omega-3 fatty acid desaturase" /note-"linoleic acid and hexadecadionoic acids desaturase"

/translation "MACWVLSECGIPPIERVYFEPRICHEILECHITKIRFCRITHCH

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Bennett, A., Labavitch, J.M., Powell, A. and Stotz, H.
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THE STATE OF THE S sequences of the gene (066074) and the cDNA (066068) revealed the presence of a single intron of 1134 bp at a post, botween nucleotides 86 and 89 or the cDNA, which is 4 nucleotides 5′ to thin the include of the cDNA is contained in close 697803. Plasmid p32103 was apposited as contacted [1942 with the ATCC and bears fragment from the phage DNA in pRocessript vertor. rymber Amer (909). As isolated symbolm acid (raqmest to the

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na_Nov 1984 (first entry) standard; DNA; 1790 딾

plasmed pFad2 l. Sequence of corm microsomal dolta 12 desaturase in the dDNA

Fatty acid; desaturase; lipid; unsaturated; transgenic plant; ?⊬a muys. Location/Qualifiers

/*tag a W09411516

W09411516 A. 26-MAY 1994. 15-ACT-1993; HD3987 17-NOV 1992; US-977339.

(DUPO) DU PONT DE NEMOURS &

WPI; 44 183515/22. Lightner JF Okuley JJ;

P PSDB; R53700. fally and distribution maryment is that distributed of

plant lipid composition Flaim 3; Page 124-126; 147pp; English. Corn microsomal delta-12 desaturase cNNA was isolated using a PCR

sense and antisense primers, respectively. NS3 and RB5A/B corresp.

1 Stratic Land As 10 102 and 318 304, respectively, it PS3697,

which are conserved in most microssmall delayed about praces. A PCB product of 700kp was partitled and send as a product for something the corn cONN library. A plaque was partitled and found to occode microssmall delta 12 desaturase translated at the 2' end. This cONN of degree at a (i.e. RS^3 (6.66075) and RR^5A/B (0.66077,066078) as corn embryos. This library was used as template for POR using sets approach. A cDNA library was made to poly A+ mRNA from developing

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isolate sequences encoding fatty acid desaturases and
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Local Similarity 65.6%;
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WPI; 96-200914/20.

(SOME/) SOMERVILLE C. (VLOO/) VAN DE LOO F J. Broun P, Somerville C, Van De Loo EJ;

(BROU/)

BROUN P.

Lesquetella fendieti library by PCR amplification using primers (see also 177816-17) based on regions of bomology between cased kappa hydroxylase and Arabidopsis dell2 desaturase (fad2). A genomic inc. [Jos.] 6/3 (T2781), issued as to principle spirits for the color a kappa fatty acid hydroxylase (R95579). Transgenic plants that express

pining) modeline altered levels of hydroxylated fatty acids, e.g. league which acid (14 hydroxylaterioseness and), in seed oils,

and related products.

544 BP;

135 A;

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Claim 4; Page 66; 105pp; English SUNA States placed? (1275)?) and place? (1275)?) were obtainfrom

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acid - in genetically modified plants such as rapeseed,

conty, a fatty acid hydroxylase gene

hydroxylated tatty ands, on a definition desquerolic

or aution,

04-APH 1996, 25-SEP 1995, U11855. 26-SEP 1994, US 314596, 11-OCT-1994, US-320982. 20-SEP 1995, US-320982.

sunflower; safflower; outlon; oughers; soykean; gearut; coconut;

oil; rapeseed; Crambe; Brassica juncea; canola; flax; /home/fuller/dec97/US-08-572-027A-1.mg

oilseed; seed

oil palm; corn; ss.

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Matches

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437; Conservative

h - 27.2%, Scote 314, 188-21, 1 Similarity #6.2%; Prod. Ma. 5.645-210; 437; Conservative - 0; Mismatches 16%;

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Rappa fatty acid hydroxylase; lesquerolic acid; transgenic plant; cilered; seed [1]; tapezood; Cauche; Brassict junctu; caucha; fla 04-APR-1996. 25-SEP-1995; III)**5 W09610075-A1. misc difference 83 sunflower; safflower; cutton; cuphea, soyhean; peanut; coconut; Kappa fatty acid hydroxylise clone plosq2. /noter "base n Lesquerella tendleri. oil palm; corn; ss. 10-345-01 T27012; T27012 standard; cDNA; 543 BF. (first entry) Constitution Williams position is not identified"

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WEI; 96-200914/20. Broun P, 30 SE6 1 482 03 11-0cT-1994; US 26-SEP-1994; US-314596. (VLOG/) VAN DE LOO F J. (SOME/) (BROU/) SOMERVILLE C. BROUN P. Summarille C. TREET 320982. The Section Ed.

sunflower or cotton, conty, a fatty and hydroxylase year Claim 4; Page 65-66; 105pp; English. acid - in genetically modified plants such as rapeseed, flax, Prodn. of hydroxylated tally acids, way it independent besquered in

cDNA clones plesq2 (T279)2) and plesq3 (T27013) were obtd. from a Lesquerella fendleri library by PCR amplification using primers (see also monoted 19) based to regime of hornings between onsers high bydroxylise and the Arabidapoin dell' decartition (502). The general respending to poward and highly and specifically expressed to the fendleri. A genomic clone, plesq Hyd (T27011), was isolated using plesq2 to prote, and shown to encode a kappa fatty and hydroxylise (E05574). Therefore, plants that express plesq2 contain altered levels of hydroxylised tatty ands, e.g. lesquerolic

Query Match Best Local S Mat.ches Lenal Similarity 414 23.80, milarity 76.8%, Conservative 543 BF, Pred. No. 1.41v 180; 6.2 6.2 7. Mismatches 122; Indeis Length 543; ن Gafra

related products.

acid (14 hydroxy 11 cicostrono acid), in seed cils, waxes and

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Ŷ 12 2 1.2 2 끍 Ş 2 Ş Qy Ş 무 В 묽 484. gact at ggaat mit gaardadyjt gtit tinanaacat aanaganannaangt agbababbb 542 541 ATGITAAGGGTCAGTCAGTCAGCTCGGGTGAGTTAGGTTTAAGGTCTGGGGA 266 (1931) 1951 (1951) 1951 (1 244 ingtigaangtint onagat at anatht nagat görtigt at tint agot gtint git tat ggtint ti 601 ASACCTTACGACGGCGGCTTCCGTTGCCATITCCACCCCAACGCTGGGATCTAGAACGAC 187 127 gtgttaacagitoagittaicetegggiggeetitgialetageetifaargitaleaggi 186 781 (TSATTSTCAATSSTTTC) tiststttattattatta ASTATACATACATTTTTTTTT 840 TTCCGSTACCCCGCCGGCCAGGGAGTGGCCTCGATGGT TGTTTTTACGGAGTCCCGTT 780 ugaeettatgutggt---ttegetteaeutttetteeeteatgeueetatetttaaggae 243 -600 303

W09411516-A. 26 MAY-1994. 15-ACT-1993; HD9987. /*tag= Ricinus communis. plasmid pRF2-ic. 09-NOV-1994 (first entry) Q66072 standard; cDNA; 673 BP Eatty acid; desaturase; lipid; unsaturated; transgence plant; ss Q66072; constant macrossemal delta 12 department on the 1..673 [comption /thoughtone

P. PSDB; B53701. Hightnor JF, Okali WFT, 94 183515/22. (DRIPO) DI PONT DE NEMOLIRS & CO E I. 117.077334 okaley JJ;

plant lipid composition Claim ly Raye 199; 14%, English. the fatty and table to assessment permit alteration

was gel purified and cloned into a vector to create plasmid pRFC 10. The "00 bp incert in pRFC 10 was sequenced (Q46072). An isolated nucleic acid fragment wherein the nucleic acid identity Polysomal mPNA was isolated from castor beans of stages F-II (5 (272) and and the first and the stages for the first plant (10 (25 DAP)). If the stages have seen for soprate PT PPP reservings. The reserve transcript for some primed with landom hexamers and the PCB reaction with degenerate delta-I2 desaturase primers MC3 and MC9 (066075, QAA076). A DNA fragment of approx. 700 by was amplified from both stage I-II and stage IV V mENA.The amplified ENA fragment from one of the reactions 90% or greater to sequence 26607 is chaimed. A method to

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I RESULT Q10572 standard; DNA; 1047 Hr.

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Query Match Best Local Similarity Matches 94; Tonserv kinase activity. The INA can be inserted and the produce for the produce for the produce for the produce in the produce NPPR analogous. The product has a mal with of 115 kD (calculated Mrs 114, 452). The product of carried shall be used in the atmost of 114, 452). godnottos also be prepd. affinity chromatography. Annibodies with affinity for NPRB also be broad receptor B, NUBB, having quantyl cyclase (GC) activity and protein kinase activity. The DNA can be inserted into expression vectors kidney failure, heart failure, hyperaloosteronism, glaucoma etc. Claim 2; Fig 1; 49pp; English. Water Support N-PSDB; Q10324. WPI; 91-036711/05. Chanq M, Goeddel D, Lowe Worling 242-A. Moditied -erro 600 .602 Modified -site /label - N-glycos site Modified -site 195..197 Auman Watribratio Paptido Receptor B. 09 APR-1991 @10572; The sequence was derived from the DNA encoding natricitatic peptide /label= N-glycos site Modified vita 277... Modified -site 244..246 Modified site 35..37 Modified -site 24..26 /mote- "GC and protien kinase activity" Homo sapiens. hyperaldusteronism, glavnoma; quanyl cyclase NERB; AND; BHE; CNF; kidney fallore; heart fallore; protein kinase; (GETH) GENERATED INC 23-,miN-1989; /label= N-glycos_site /label= N-glycos site /label= N-glynos_site /label= N-glycos /label= N-glycos_site Modified_site [6]. [6] /label= extracellular domain COMP. 22 .mm-1990; mm3586. 10-JAN-1991. /label- N-glycos /label= N-glycos_site /label-/label= transmembrane domain /label= mature NFBR Sections /label= signal sequence Post Light "binds natrioretic peptides A, B and cytoplasmic domain ž. protein receptor 5 tor diagnosis and treatment of 047 RP; 112-370673 8.2%; Score 95; D8 2; L larity 9.5%; Fred. No. 1.32e 47; Conservative 278; Mismatches 669 (first entry) 349..351 479..1047 456..456 site 23 455 Location/Qualitiess 87 A; 15 G 83 G; Length 1047; [[] .] % 51 T; 11; Gaps

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975	mananndayssnrnrhrnhdnnrnrngvhtgnvcagvvgnkmn	дb
16.3	AAOCAO GOOGLAADATOAD GOODAATAAOGTAOGAGAAA	Ġ.
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3.25	395 ACCADEMICANICACEPOANACAETACIOCOCACOCEPSE OT TAAGOCACEGERAGEGERES.	CF.
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306	455 TCGAGGGAGCCAGUTTTOGAATGAGTGAGTGTACTAGTAGTAGTAAGAAGAAGAAGAAGAAGA	Cp .
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456	515 ACCTACTTCCCCTACCACTTCATCTCTCTCTCTCTCTCT	Ср
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216	ACATOAGG-GTGCGTGCGAAAG-GGTTGTTG	Cp
260	ryhkgagsrntnsnrgssygsnmtahgkynnnantghnkgnvvankhvnkkrnnn	₽b
574	633 GAAATGAVAA GAAAGCGACGGGAAAGGGTTIGGGAAGAGGTTGAAGTACAA .	€p
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634	693 AGCSPCGGAGAPCHATALCPGGAGADOS TOGOSCIOCTPSTACATGGGAGGGTTGGGGGG	G.
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754	813 ASTOATOAACACGAGGAAAACKATTGA AATTGAGAAAGGAGAA TTGGGAGAAAGAAAACATT	Cp:
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Query Match 5.6%; Score 65; DB 2; Length 1047; Best Local Similarity 9.4%; Fred. No. 9.29c 27; Matches 68; Conservative 202; Mismar-hot 449; Indols
                                                                                                                                                                                                                                                         The sequence was delived from the DNA encoding natrioratic poptide transfers B. MFER, having granty cyclass (GC) activity and protein kinase activity. The DNA can be inserted to expression vectors for the produce of the produce of the produce of the produce. The protein has a mod wt. of 115 kD (calculated Mrs 114,952). The protein (or variants) can be used in treatment of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q10572;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q10572 standard; DNA; 1047 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /2-JUN-1989; US-370673.
(GETT) GENEWIEGH INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /label= cytoplasmic domain
/note- "GC and protien kinase activity"
Modified -site 24..26
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human Natriuretic Peptide Receptor B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09-APP-1991 (first entry)
                                                                                                                                                               also be prepd.
                                                                                                                                                                                                                                 matriumetic peptide disorders, and also to isolate peptidos using
                                                                                                                                                                                                                                                                                                                                                                                                                                                       kidney failure, heart failure, hyperaldosteronism, glaucoma etc.
Claim 3; Fig 1; 49pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Chang M, Goeddel D, Lowe D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /label= N-glycos_site
Modified -site 161..163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /label= N-glycos_site
Modified -site 35...37
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                                                                                                                                                                                                affinity chromatography. Antibodies with affinity for NPRB can
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; Q10324.
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Mcd:find_site Foot.602
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Modified \site 277..279
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Modified -site 244..246
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Domain 479..1047
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Protein 12
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                                                                                                                                       1047 RP;
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                                                                                                                                                                                                                                                                                                                           Q51746 standard;
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| 1127 GTGTG 1131
       01-DEC-1993
                                             EP-571911-A
                                                                                   Synthetic.
                                                                                                                                                                                                                                                                                     Q51746;
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               congred singularly in any given mutant. See also P80575.
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(BECT) BECTON DICKINSON CO.
Shank DD, Speais PA; Oligonuclestade prote MK14-A consists of nucleotides 5-9) of MK14 (Q51735). It hybridized to all spp. of mycobacteria tested, but cross reacted to a few non-mycobacterial spp. The probe may be useful as an initial corespitus mycobacterial infection. See also Q51735-45 and Q51747-59.

Sequence 91 BP; 5 A; 17 C; 15 G; 4 T; Oligenucleutide; DNA probe; myrobateria; disease diagnosis, Q51746 standard; cDNA; 91 BP. Q51746; WP1; 93-378844/48. Oligonucleotide probe MK14 A Claim 3; Page 14; 23pp; English. samples detection and amplification of Mycobacteria nucleic acid in New oligatmustestide protest specific for Mycobasteria - used for Synthetic. 31-MAY-1994 (first entry) 131 hhddhywybbbwynwhihnnianaachnihwahnwhbnnhrnwaywrhdarrddwhaawch 190 374 FOTTWOAUTOCTULUTUTE OF THE THETOCHOMAGIACASTCATCGGASCCACC 433 4 teeggegserhsyyrithirishkheitkhiridibirhirsvirivehbirihirihirihiriyvsvete 63 9; Indels 0; Gaps 0,

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Fatty world; desaturase; lipid; unsaturated; transgenic Çéfnék standard; Sequence encoding microsomal delta 12 desaturase. 09-NOV 1994 (first entry) Q66068 ~5NA; 1372 θĐ

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Genes for fatty acid desaturase enzymes - permit alteration plant lipid composition

gositively bybridizing plague, and subcloning a 6kb Hird III insert The generotivese, to 066060 was isolated by someoning Atabidopsis genomic DNA library using radiolabeled pSE2b oDNA insert, purifying Claim 3; Page 112-114; 147pp; English.

Comparison of the

fragment from the phage DNA in palaescript vector. Comparison of the persons of the persons (e66.7%) and the TNA (e56.7%) revealed the presence of a single intens of 113 because the between control den 88 and 80 pp. the 1200, which is 4 persons of the initiation codes. The cDNA is contained in close paying and lease paying was deposited in the ATCC and leases

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where in the notice of aimed Q66068 or Q66074 is claimed at 4.4 A. · · · 3

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Ş 3 Ş Ş DF. Ş Ş ç Ş Ş Вb 님 Ş 밁 Ş 문 Ş Ъ 5 ф DЬ Ş В 무 8 Matches 897; Conservative 1119 gene comprising the sequence of plesq-Hyd, plesq2 or plesq3 (TZ/Uis) show altered levels of hydroxylated fatty arids, e.g. lesquerolic and (14 hydroxylated rate), in seed hits, waxes and Sequence related products. genomic library prepd. from young leaves of I. fendleti by screening with clone plosq2 (727012). Transposit plants containing a chimeric hydroxylase (895579) of besquerella tendheri. Conomic clane plesselyd (T27011) codes for the tappa fatty anid 5 3 7 ۍ ۲ 478 418 402 942 α α !\ 822 2 642 462 35.5 762 300 707 œ 285 1000 __ otttaccyttaccottottacaaaygattgactgototgogatctgogototatggagtaccy 1178 HITTEL TO THE TITLE TO THE TITLE TO THE TITLE TO THE TRANSPORMENT OF THE TITLE TO THE TRANSPORMENT OF THE gaccyayaacyctccagatatacatctcagatgctgqfathrtagctgfcffffffffffffffff GGAAGACCTTACGACGGCGACGCGCTTCCGTTGCCATTTCCACCCCAACGCTCCCCATCTACGAC 657 emeametraacearicaericaericaericaericae accessina estinataerraaceiricaaceiricae 597 etggtgttaacagttcagtttatcctcqqqqtqqcctttgtatctagcctttaatgtatca 1001 AGREATOGRAGEACOARDOCAACAOTEA FOOTIGRAGACACACAACHTITIGOCOC agticatingtogting on at modern to the grant of the garden states and the titing times. CACACOSTCCCTCATCTTCCCACTCTTCCTCCTCCTCCTTACTTCTCTCTCAAAGTAC gadadtigttggtttt atdttodattodattodttodtodtodtodttadttadtodiggaaatad CTCTC --CT-ACTTCGCCTGGCCTCTCIACTGGGCTGTGAAAGGTGTGTGTGTAACGGG int at at a sort lacet agost tygont at at attagggt at gli disagget gtigt of tladeoggt. APPRACOSOTATO PROGRAMA A CALOTTO ACTUTO A yggtgetggtgguagaataatggttaececectettecaagaaateagaaactguagec 461 CACCGOCAGOCICTE CAGATATIA CATOTICAGA COTEGOCATO TICGOCATO LOCITACIA COST actitisgttictigetiet setaegttigeesesaattaettetetetetetetenagen example great type to be a large great of the energy of the total tenders and the order by at a time. Both Simularity 77,5%; Store 697; 28 21; Simularity 77,5%; Steel No. 0,000+80; 1855 BP; 490 A; thought to again the transport of grands are the said field = 0; Mismatches 255; Indels 6; 405 C; 368 G; It was obtd. from a Length 1855; _ _ _ 587 1; 701

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RESULT
RE 5 Ç 7 Ş 7 9 훙 3 Ş Ş 긎 구 Ş Z 골 which are conserved in most microsomal delta-12 desaturases. A FCR product of 720kg was puritied and used as a probe for screening the corn cDNA library. A plaque was puritied and found to encode microsomal delta-12 desaturase truncated at the 3' end. This cDNA was used to probed the corn cDNA library again. The close contig-Genes for fatty acid desaturase enzymes - permit alteration of plant hipid composition. Claim 3; Fage 124-125; Id2pp; English. Coronmotosomal delta-12 desaturase (CNA was isolated using a PCR approach. A cNAA library was mode to poly AtmoNA form developing /*tag= a \mo44!1516-A. Ξ 1419 1179 of things (agree of the ending tenting) as the of types and end of ending tenting (agree) of the control o Fatty acid; desaturase; lipid; unsaturated; transgenic plant; Sequence of corn microsomal delta 12 desaturase in the cDNA ng Nov 1994 (first entry) Q66071; Q66071 standard; DNA; 1790 1539 turaaraataagttatga 1556 1350 cated attigorable aregnatit at apognating sangularing and suggests and general 418 sense and antisense primers, respectively. NSS and RSSA/B corresp. to stretches of AAs 101-109 and 318-326, respectively, of RS3697, of degretate office MS3 (066075) and SBSA/B (066077,066078) as corn embryos. This library was used as template for PCR using sets P-PSDB; R53700. WPI; 94 183515/22. plasmid pFad2 l Lightner JE, (DITEO) DIT PONT DE NEMOURS & CO 17-NOV-1992; US-977339. 838 (TGCCTCACTACGATTCGTCCGACTGGGATTGGTTTCAGGGTAGTTTTGGGTAGGTTTGACTGTTCAC why captering to accand compilateachinaphaeaaaatac aabbb cataaabanii 1017 898 ACACACTACCAMPCTTCAACATCTTCCACACTATTACCCACACGCACCTCCCCAT 718 emembers and constitute and substantial energy of the expectation 377g that had the the the theory was appropriet by the theory of the terms of the theory of the the theory of the the \tan*+ggtast*artarcar*+rgatggaararrytggtafgggrafgfafagggaa 1478 TACAACAATAAGTTATGA 1155 agagant at ggaat at tiga anaaggtigt tinddat adnoc adnoc an og opnoc gtiggot natii 1868 Ckuley JJ; _ = = 165...1326 Location/Qualifiers ΕΙ. **4**57

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Ş 9 Ş 문 7 \mathcal{L}_{i} 才 \mathcal{L}_{i} 2 2 В 라 Query Match Matches The gene corresp. to 266070 was isolated by screening lambda phage ofRAA library made with poly A+ mBNA from developing scyteral sends with individuable pSF2b. The phagemid derived from phage 164070, sek justed gSF2-1648, was sequenced (666070). Plasmid pSF2-1648 was sequenced (666070). Plasmid pSF2-1648 was sequenced (666070). Plasmid pSF2-1648 was sequenced for an individual for the ATCC 60042. An isolated nucleus acid fragment 1278 1218 360 066070; g66070 standard, Sequence 066070 is claimed. Claim); Page 120-126; 147pp; English. plant lipid composition Cenes for fatty acid desatorase enzymes - permit alteration Lightner JE, Okul WPI; 94-183515/22. 26-MAY:1994. 15-00T:1993; H09987. CDS Fatty scid; desaturase; lipid; unsaturated; transgenic plant; pSF2~169K. Sequence encoding soytwar microsomal delta 12 desiturate in plasmid 09-NOV-1994 (first entry) wherein the nucleic acid identity is 90% or greater P-PSDB; R53699. (DUPO) BUT FONT DE NEMOURS ₩09411516-A. 17-NOV 1992; US-977339. 916 ANDAROUTETTE CACAMATATIACOMA ACCUACOTO-COMENTO TOTATTE TOTATANCATO 183 craccatteactgttggccauctcaagaaaycaattccaccacacartgriff caycgctcc 242 796 TrochesterteAfeAcTtActteCacacacacatectTooloureTactactation 28 SOLI VASSOUVATELLI II II II II II II II saving of the earliest early an angeled to go go are rected to the earliest of 1157 COCCUTTCACTGTCSSACAACTCAAGAAAGCAATCCCAGCA ACTGTTTCAAACGCTCS 144 gtingagnenga 1288 ch 30.5%; 1 Similarity 67.8%, 726; Conservative 1462 Okuley JJ; BP; 108..1247 Location/Qualifiers . TAKA, 1442 BP 382 A; 47 Score 352; DR 10; I Fred. W., 3.27e 238; 0; Mismatches 339; 3 Ħ 332 C; 306 C; Length 1462; Indels ċ 442 __ <u>6</u>.

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17-NoV-1992; us-977339.
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10-SEP-1996 (first entry)
                                                                  T27013 standard; cDNA;
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Produced hydroxylated fatty arids, e.g. cirilob to at hespecialic
acid - in genetically modified plants such as topeseed, tlax,
sunflower or outlon, could, a fatty acid hydroxylase gene
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Rroun P, Somerville C, Van De Loo FJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             oil palm; corn; ss.
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Sequence 544 BP;
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hydroxylase and Arabidopsis dell2 desaturase (tod2). A genomic
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l Similatity #6.6%;
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Frod Woo 5 544-208;
0, Mismatches 106;
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Kappa fatty acid hydroxylase clone plesq2.
Kappa fatty acid hydroxylase; lesquerolle acid; transgenie plant; cileged; seed cil; tapeseed; Cambe; Brassica jamen; cambla, fia misc_difference 83 sunflower; safflower; cotton; cuphea; soybean, peanut; coconut; Lesquerella tendleri. oil palm; corn; ss. T27012 standard; cDNA; 543 BP. (first entry) Location/Qualifiers

-pcj*/ W09610075-A1. /note= "base n a) position 83 is not identified"

04-APR-1996. 25 SEP 1995; 25 2EP 1995; U11855. 26-SEP-1994; US-314596

(SOME/) 11-0CT-1994; US-20 SEP 1995; US (BROU/) BROUN P SOMERVILLE C.

Broun (/00/I/) 96.200914/20 VAN DE LOOF J. Somerville C, Van. De Loo EJ

sunflower or cotton, contg. a fatty acid hydroxylase gene acid - in genetically modified plants such as rapeseed, of hydroxylated fatty and, oug timinologic to besquenchia

cDNA closes plesq2 (T27012) and plesq3 (T27013) were obtd. from Claim 4; Page 65-66; 105pp; English.

Lesquerella fendleri library by PCR amplification using primets (see also 17/01/-11) tasked on regular at the delay to be appropriately tasked and the Architecture (13d). The generalized respectively expressed in series of the fendleri. A genomic clone, placefuld (17701), was soluted using placeful a probe, and shown to enough a tages (atty acid hydroxylase (89570). Transpenio plants that express placeful contain altered levels of hydroxylated fatty acids, e.g. leggerolic contain altered levels of hydroxylated fatty acids, e.g. leggerolic

acid related products. (14-hydroxy 11 electronic acid), in seed oils, wares

43 PP: 136:3 .:3 100 166.73

문 Best I Matches Local Similarity Mutter. CANOGRAPI AVAIT CAACAAT JACTOR OPERAGOATA AT THE HILLION CAACAAT CAACA 413, Conservative Mismulches 123; 36 Lange Eddy Indexs

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09-NOV-1994 (first entry) Ricinus Batty anddy desaturase, lipidy unsaturated; plasmid pRF2 1C. 066072; Q66072 standard; cDNA; 673 ∵ommunis. destor micros and hedation/Qualifiers Halts 12 desertions

W09411516-A. 1..673

15-00F-1993; H0987.

SHIDWEN 3d TNOG Hd (DGING) e I

Hightner JF, Okal WFT; 94 183515/22. Okaley JJ;

P-PSDB: 853701. permit alteration

Chain 3; Page 179; 147gg; English.

Polysomal mRNA was isolated from mastor beans of studes 1-10 TAO and also from taster twices of trajectory (m. 96 p 10 of the diseBVA was used for expression RT 909 post from The reverse trajectory page (not not primery with random 25 DAP)

hexamers and the PCR reaction with degenerate delta-12 desirors of primors No3 and No3 (066075, 066076). A DNA fragment of approx. 700 by was amplified from both stage LTF and stage

IV-V mENA.The amplified BNA fragment from one of the reactions was gel purified and closed into a vector to croste plasmid psp. 11. The Tolky insert in psp. 11 was sequenced ((2007)). An isolated nucleic acid fragment wherein the nucleic acid identity

ecolections or inspectly to Q6607) is claimed. A method to

Dec 17

28888888 sequences in toobjectoring and other fatty and desaring as emplements; Tentifying conserved sequences of 4 or more MAs; designed degenerate of one force to the oligos based on the conserved requences; and using the clips to sequences in R53697-R53762 and other fatty acid desaturase

isolate sequences encoding fatty acid desaturases and

desaturase-related enzymes. Sequence 673 BP; 154 A;

169 C; 150 G; 200 T;

Matches Best Query Match y Match 22.3%; Local Similarity 70.3%; Conservative Scale 257; DB 10; Pred. No. 1.33e-166; Mismatches 196; Indels Length 673; ن. • •

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RESULT Q10572 standard; DNA; 1947 BP.

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Human Natriusetio Peptido Receptor B. MP2B, NMP; PMP; CMP; hadovy failute, heart failute; protono kinados 09-AFR-1991 010572; /label= signal sequence Peptide hyperaldosterocism, glascoma, guanyl cyclase (first entry) 1...22 Location/Qualifiers

[omain Protein /label- extracellular domain /label= mature NPBR 23. 455

Domain /note= "binds natriuretic peptides 456..456 and

Domain /note- "GC /] aha! -/labal= transmembrane domain cytoplasmic domain and protien kinase 479..1047

Modified site 24, 26 activity.

/label= N-glycos_site Modified site 195..197 /label= N-glycos_site Moditied -site [6]... /label= N-glycos site Modified -site 35, 37

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22-JHN-1990; HU3586. 23-JHN-1989; HS 370673. (GETH) GENENTECH INC. M, Goeddel D, Lowe D;

Chang N-PSDB; Q10324. WPI; 91-036711/05.

kidney failure, heart failure, hyperaldosteronism, Natified in protein receptor B - for diagnosis and treatment glaucoma etc 0

kinase activity. The RNA can be inserted now experient to produce for the produce of the produce of the produce. The protein has a mod with of 115 kD (calculated Mrs 114,352). The protein (or variants) can be obtain treatment of natriuretic peptide disorders, and also to isolate peptides using affiliaty chipman agraphy. Antibodies with affinity for NPRB can remediat 6, News, having grange sychase (GC) activity and protein The sequence was derived from the DNA emondated material electron Claim 3; Fig 1; 49pp; English.

347 BP; 87 A; 15 C; 83 G; <u>-</u>3

Guerry Match 8.2%; Best Local Similarity 8.8%; Matches 8.2%; Scale 9%; SB 2; Act larity 8.8%; Pred. No. 1.77e-47; Conservative 271; Mismatches 577; Length 1047; indels 10; Gaps

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08-NOV-}490 (first entry)

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N81164 stundard; DNA;

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Escherichia coli.

Location/Qualitiers

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05-MAR-1988; 105163.
03-APR-1987; US-034819.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Random point mutations were introduced into the alpha fragment of E.coli beta-galactosidase. The wild type sequence was obtained as single stranded template and an oligonucleut. Was hybridised to
                                                                                                                                                                                                                                                                                                                                             reverse transcriptuse. Nucleotides are mislimorporated by the transcriptuse and the molecules are completed to forms that can be
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Job time : 233 secs. Search completed: Wed Dec 17 15:30:50 1997

Release 2.15 C.hn F. Collins, Biocomputing Research Unit. Copyright (c) 1994, 1994, 1994 University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc.

file database search, using Smith-Waterman algorithm

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Listing first 45 summaries

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		066060 is claimed. Sequence 1394 HP; 320 A; 296 C; 323 C; 355 P;	yr ⊝ .
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	ee h	Claim 3; Page 116-118; 147pp; English. The gene corresp. to Q66069 was isolated by screening lam cDNA library made with poly A+ mRNA from developing B. na with radiolabeled pSF2b cDNA insert. The phagemid derived	13338 13338

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W09411516-A.
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imitiation ouden. The other is contained in close p92103. Plasmid p92103 was deposited on october 16, 1992 with the ATCC and boars procession number ATCC 60005. An isolated number and fragment
                                                                                                                                                                   fragment from the phage DNA in pRivescript vector. Comparison of the sequences of the gene (Q6603) and the DNA (Q6608) revealed the presence of a single introd of 1134 bp at a posm, between nucleotides 88 and 89 or the CNA, which is 4 nucleotides 5° to the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       plant lipid emposition
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Compositor (atry acid desarturase enzymes - permit alteration
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15-OCT-1993; 103987.
17 MOV 1092; 15.977339.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The gene corresp. to 066066 was isolated by screening Arabidopsis general PMA litrary using radiculated—i poppl iCMA insort, purifying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Lightner JE,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 3; Page 136-138; 147pp; English.
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                                                 Query Match 69.6%;
Best Local Similarity 85.5%;
                                                                                                                                                                                                                                                      Q66068 or Q66074 is claimed.
                                                                                                                                                                                                                                                                                                                                                    sequences of the gene (066074) and the chiRA (066068) invested the presence of a single intron of 1134 bp at a posm, between mighanished as the graph of the chiRA, which is 4 minor plays 5' to the initiation condon. The chiRA is contained in clone p2003, Plasmid p22013 was deposited as near sheet 16, 1992 with the ATCT and bears accession number ATCC 60095, An isolated nucleic acid fragment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The general variety, to QARARA was isolated by screening Arabidopsis genomic DNA library using radiolabeled pSF2b cDNA insert, purifying
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Arabidopsis thaliana.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          positively bybridising player, and sub-lening a 645 Mind III insert fragment from the phage DNA in pBluescript vector. Comparison of the
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Genes for fatty acid desaturase enzymes - permit alteration
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17-NOV-1992; US-977339.
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Proof. of hydroxylated tarty acids, e.g ricinoleic or longuerolic acid in genetically modified plants such as rapeseed, flax, sunflower or control, confg. a fatty acid hydroxylase gone Claim 4; Page 67-68; 105pp; English.
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Q66071 is claimed. A method to isolate nucleic acid fragments wherein the nucleic acid identity is 90% or greater to

encoding latty acid desaturases and related enzymes is claimed which comprises: comparing AA sequences in R53697-R53702 and other fatty acid desaturase sequences; identifying conserved sequences of

sequences; and using the oligos to isolated sequences encoding fatty 4 or more has; designed degenerate oligos based on the conserved -cid desaturases and desaturase-related enzymes.

Sequence 1790 BP; 321 A; .5×7 € 544 6; 34 3 T;

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궁 978 - tiggetiggtigeticatinanetanetigenageananenaannegtingsetinnnnssietisnganting - 1037

Ę, Ş 796 TTCTTAGTTTGATCACCTTACTIGCAGGAGAGGGATCCTTGCCTGCTGACTATGACTCG 855

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구 Ş Ş 1096 стекалесеса 1106 1278 gtingageolga 1288 1036 CARTIGLATIBLATIBLE INTESTIBLITATABLE SATISTARAGGAGGGAAGGGAAGGGAGTGTATCTAT 1036

066070 standard; cDNA; 1462 BP

066070;

09-NOV-1994 (first entry)

Sequence encoding soybean microsomal delta-12 desaturase in plasmid pSF2-169K.

Fatty acid; desaturase; lipid; unsaturated; transquaic plant;

Glycine max. Location/Qualifiers [58..1247

/*tag= a W09411516-A.

26-MAY-1994.

15-DCT-1993; U09987. 17-NOV-1992; US-977339.

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(DUPO) DU PONT DE NEMOURS Okuley JJ; ٩

Lightner JE, Okule WPI; 94-183514/22.

P-PSDB; R53699.

Centers for fatty and desaturase enzymes permit alberation

plant lipid composition

Claim 3; Page 120-126; 147pp; English.

The gene curresp. to Q66070 was isolated by screening lambda phage with library made with poly At mRNA from developing coybean seeds

with radiolabeled pSF2b. The phagemid derived from phage 1646, designated pSF2-164K, was sequenced (Q66878). Plasmid pSF2-164K was deposited on ectober 14, 1442 with the ATCC and bears accession number ATCC 69892. An isolated nucleic acid fragment

wherein the nucleic acid identity is 90% or greater to

Q66070 is claimed.

pest becar Query Match Matches Sequence h 29.4%; Score 339; DB 10; Length 1462; Similarity 63.6%; Fiell No. 3.636 226; 1462 BP; Conservative 382 A; 0; Mismatches 345; 332 C; 306 C; [ride-]s 442 T; 5

Ş 밁 183 obacoat transfigit (ggmaach naagaaagmaath noannanach gnitht nagogni soc 242 85 COGCCCTTCACTGTCGGGAGAACTCAAGAAGCAATGGGAGGGGAGTGTTTCAAAGGGTCG 144

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1196 1104	.137 gadadgddattttadaaggdadtgiqqaagaagagagagagtgddatgtgtggagogd 119 	1137	Ūβ
1044	CATGCGATGGAAGCTACGAAGGCGATAAAAGCCGATACTGGGAAGAGTATTATCAGTTGCAT	586	Qу
1136	catgcaatggaggcasccaatgcaatcaagccaatattgggtgagtactaccaatttgat	1077	DЬ
984	H H H H H H H H H H H H H H H H H H H	975	ÛУ
1076	tttcatcacataactgatactcatgtggctcaccatctctctc	1017	Ď
424	GATTOSTETSAGGGGGTTTGGGGGGAGGGGGAGGGGAGGGGAGGAGTAGGGGAGAGGTTGGAGAGAGTG	χ Σ.	Qy
1016	to the control of the	957	D.
264	TEGATOACTACTACAGAGAGAGAGATCCTTCCCTGCCTCACTAGACTCGTCTGAGGGG	505	Qy
956	actatoscatatttgcayoacacactttgccttgcctcattacyattcatcagaatgg	897	
ŗ.	CTTCCCTCATCCTCTCTACGGASTTCCCTTCTACTTATTATT AATGASTTCTAATT	745	Qy
896	ttggtttggctgctatgtgtttatggggtgcctttgctcattgtgaacggttttcttgtg	837	
744	POSAS SETS SEASON TO SEASON THE SEASON TO SEAS	685	
9836	totgalgtigottigittiotgigactiactotototacogtgttgcaaccotgaaaggg	777	-
F. X.	THE REPORT OF THE PROPERTY OF		30
776	agecactaccaccettatgeteccat stattetaaccgtgagagggettetgatetatgte	717	-
6.4	TOTOL CONTRACTOR TO THE THE TENTO OF THE CONTRACTOR CON	565	QУ
316	gygrygon argtattt agont maargt ot ot ggd agacont at gat agitt til -goal	660	-
564	OPAAREMATERAACAAPOOTTEGORAACORAFETTAAGETTCAGTTCAGTCCTC	27 55 27	
629	tocaagtacttaaacaaccoolotaggaagggolgtttotottototgtcacactcacaata	600	~
1 4	COMPOST NACACACACAACICATICITETE CONTRACAACAACAACACACACACACACACACACACACACACA	445	VQ.
ñńG	ggttoccttgaccgtgatgaagtgtttgtcccaaaaccaaaatccaaagttgcatggttt	540	Db
444	TTCCTOTOGROOTTA-TTCT-CTGGAAGTA-GACTATCGADGCGATCCAACACT	385	Qy
ķΣà	acacttttagtcccttatttctcatggaaaataagccatcgccgccatcactccaacaca	480	Вb
184	CACCACGCCTCAGCGACTACCAGTGGCTSGACSACGACGGTGGGCCTCATCTTCCACTGC	325	Qy
479	caccatqccttcaqcaagtaccaatgggttgabgatqttqtbgggtttgaccttcactca	420	DЬ
374	TACTEGGG OTTO CAPAGE TACETRO TAAC GGG CEPT GGG TATAAC CATA AA STGCGG	265	Ϋ́
419	tatt gggtt stockaaggtt goett et eakt ggt gt gggt gatt get eakgagt gt ggt	360	3
16.4		500	ÚУ
359	attgocaccaectacttecaectccttcctcaaccettttccctcattgcatggccaate	300	9
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                                                                                                                                                                                                                                                                                                                              Query Match 27.6%;
Rost Local Similarity 80.6%;
Matches 440; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Produl of hydroxylated fatty acids, e.g rivinoleic or lesquerolic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (VLOO/) VAN DE LOO F J.
Broun F. Somerville C, Van De Loo FJ;
WP[; 45-788914/70.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kappa fatty acid hydroxylase clone plesq3.
Kappa farry acid hydroxylase; lesquerolic acid; transgenic plant; oilseed, seed oil; rapeseed; Clambe; Brassica juncea; canola; flax;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (see also T27016-17) based on regions of homology between castor kappa hydroxylase and Arabidopsis deli2 desaturase (fad2). A genomic close, place-hyd (17711), is larged using place1 as in the castod a kappa fatty acid hydroxylase (R95579). Transpenie plants that express
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 4; Page 66; 105pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          acid - in genetically modified plants such as rapeseed, flax,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              26-SEP-1994; US-314596.
11-OCT-1994; US-320982.
20-SEP-1995; US-320982.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    oil palm; corn; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sunflower; safflower; cotton; cuphea; soykean; peanut; coconut;
                                                                                                                                                                                                                                                                                                                                                                                                                  and related products.
                                                                                                                                                                                                                                                                                                                                                                                                                                                     plesq3 contain altered levels of hydroxylated fatty acids, e.g.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   dnA claims glengt (12781) and plosed (12781) was used from Lasquerella fendler; library by PCR amplification using primers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sunflower or motton, conty, a fatty amid hydroxylase gene
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                                                                                                                                                                                                                                                                                                                                                                                                                                  lesquerolic acid (14-hydroxy-11-biosenoio acid), in seed oils, waxes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   114-APR-1446.
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238 alegueegtgusegeeteeagatttaeafetetgatgetggtaffet agengtetgtat 297
                                                                                                                                                                                                                                                          (SOME/) SOMERVILLE C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BROU/) BROUN P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          727013 standard; cDNA; 544 BP.
                                                                                                                         535 ACCGRGATGTTAACGGTTCACTCTCGGGTTGGGCTTTGTACTTAGGTTTGAACGT 594
                                                                                                                                       181 tetggeagaeeetaeaatggt---ttegetteeeatttetteeeeaatgeteetatetae 237
                                                                                                                                                                                                                         61 ccaaagcagaaatccgcaatcaagtggtacggcgaatacctcaacaacactcotggtogo 120
                                                   TOGGGGAGACCITACCAPCACCACCACCTTTCGCCATTTACCCCAACCCTCCCATCTAC
                                                                                                                                                                                                                                                                                                                                                                                                 544 BP;
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Fred. No. 3.43e-211;
0; Mismatches 103; Indels
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Ş Ş S 3 S Ş Ş 9 d d Rest A CARA Library made to poly A+ mRNA isolated from developing custor beams (stayou TV V, 29-25 EAF) was screened. Rudiolabeled probe proph from pSP2k or pRF2-10 were added and allowed to desaturase-related enzymes, hybridise. Three of the strongly hybridising plaques and three the weakly hybridising plaques were purified. The inserts were Claim 3; Page 131-133; 14/pp; English. P-PSDB; R53702. SIGIRUS COMMUNIS. Farty acid; desaturase; lipid; unsaturated; transgenic plant; ss Graphics of custor microsomal delta-12 desaturase in the cDNA of plasmid $\mathtt{pRF1970}/42$. Q66073 standard; cDNA; 1369 oligos based on the conserved sequences; and using the oligos to and related enzymes is claimed which comprises: comparing AA sequences: Q66073. An isolated nucleic acid fragment wherein the nucleic acid plant lipid composition Genes for fatty doi'd decutarise enzymes - permit alteration Lightner JE, W09411516-A Q66073; iscrate sequences encoding fatty acid desaturases and identifying conserved sequences of 4 or more AAs; designed degenerate identity is 90% in greater to sequence $26.00\,\mathrm{H}$ is claimed. A methodate nucleic acid fragments encoding fatty acid desaturases organized and the requence of plasmid £88197: 42 is given in (DUPO) DU PONT DE NEMONRS 4 CO 17-NOV-1992; HS-977339. 15-OCT-1993; UU9987 26 MAY-1994. 09 NOV-1994 (first entry) 478 ∞ 35 696 OVELVE Syn 20.00 655_AACGACCGCGAGCGTCTCCCAGATATACATCTCCGACGCTGGCATCCTCGGGTCTCGGGTAC caccac 543 To old off CACIATICACTOR Off CACIDATA PROFIT CACABABABABATTITICA CACCATT - 8-94 gedttdenteachatgatteateadagtggdathddentagagdagethadenaetdha 470 Okuley JJ; Location/Qualifiers 184..134 529 07 tik lû; tangth 1369, 303 5; 14.7

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Marches 700; Conservative

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                                                                                                                                      Query Match
Bout Local S
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                                                                                                                                                                                                                                       (see also T27016-17) based on regions of homology between castor ka hydroxyluse and the Arabidopsis dell2 desaturase (Fa32). The gene corresponding to piesq2 is highly and specifically expressed in seeds of L. fendleri. A genemic clare, plosq Hyd (T2701), was isolated using plosq2 as probe, and shown to encode a kappa fatty acid hydroxyluse (E35579). Transymic plants that express plosq2 acid hydroxyluse (E35579).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Kuppa fatty acid bydroxylase blane plesq2.
Kappa fatty acid hydroxylase; lesquerolic acid; transgenic plant; cilsoed; seed oil; rapeseed; frambe; Brasslea juncea; canola; flan;
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                                                                                                                                                                                                                                                                                                                                  Claim 4; Page 65-66; 105pp; English.

SDNA clones piesq2 (137012) and piesq3 (127013) were obtd. from a

besquerella fendleri library by PCR amplification using primers
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                                                                                                                                                                                                                             acid hydroxylase (835579). Transjenic plants that express plesq? contain altered levels of hydroxylated fatty acids, e.g. lesquerolic
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                                                                                                                                                                                                                                                                                                                                                                              sunflower or cotton, contq. a fatty acid hydroxylase gene
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                                                                                                                                                                                                             acid (14 hydroxy 11 eicosenoic acid), in seed oils, waxes and
                                                                                                                                                                                                                                                                                                                                                                                              acid - in genetically modified plants such as rapeseed, flax,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (BROU/)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20 SEP-1495; US-320982
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26 SEP-1994; US-314596
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lesquerella fendleri.
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                                                           Coral Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BROUN P.
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                                                                                                                                    Score 280; DB 21;
Pred. No. 4.57e 182;
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An isolated nucleic acid fragment wherein the nucleic acid identity is 40% or greater to sequence 066071 is claimed. A mortal of
                                                                                                       was gel purified and cloned into a vector to create plusmid pRF2-10 was sequenced (WAS(07))
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                                                                                                                                                                                                                                                                                    The reverse transcriptuse reaction was primed with random hexamets and the FCR reaction with degenerate delta-12 desarurase primors NS3 and NS9 (066075, 066076). A DNA fragment of approx. 70% by was amplified from both stage I II and stage of approx.
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15-ACT-1993; HA9987.
17-NOV-1992; HS 977339.
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IV-V mRNA.The implified DNA fragment from one of the reactions
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Matches Best Local Similarity 11.0%; Query Match Human Matriur-tin F-ptide Receptor B.
NFRB; ANF; BNF; CNF; kidney failure; heart failure; protein kinase; 114,952). The protein (or variants) can be used in treatment of matriuretic peptude disorders, and also to isolate peptudes using affinity cla mateuraphy. Antibodies with affinity for MPRB can thought B, 3755, having quary tycles (**) and the first in kinase activity. The DNA can be inserted into expression vectors to the profit of the profit, of the profit of kidney failute, heart failure, hyperaldosteronism, glaucoma etc. Nattionation protein receptor B - for diagnosis and treatment of N-PSDB; Q10324. Homo sapiens. N9-APR-1991 (first entry) Q10572; also be prepd. WPI; 91.036711/05. Chang M, Goeddel D, Lowe D; (GETH) GENERATECH INC. 23-JUN 1989; US-370673. Modified site 277..279 /label= N-glycos_site Modified -site 244..246 /label= N-glycos_site Modified -site 195..197 /label= N-glycos_site Modified -site 161..163 /label= N-glycos_site Modified -site 35..37 hyperaldosteronism; glaucoma; guanyl cyclase. The sequence was derived from the DNA encoding natribiotic poptide Claim 3; Fig 1; 49pp; English. 22 JUN 1490; U03586. ₩09100292-A. Modified -site Modified -site Modified -site 24..26 /note= "GC Peptide 10-JAN 1991. /label N-glycos_site /label= N-glycos_site /label·N-glyccs_site /label: N-glycos_site /label- transmembrane domain Tremo /label= mature NPBR /label signal sequence *binds patriuretic peptides 84; Conservative 220; Mismatches 449; cytoplasmic domain extracellular domain and protien kinase activity .047 BP; 349..351 600..602 479..1047 456..456 23..455 Location/Qualifiers 8.78 87 A; Score 100; DB 2; Pred. No. 1.99e-50; 15 C; A, B and 83 G; Length 1047; ladels 51 T; Ξ Sdeg 10;

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oS Homo sapiens. Location/Qualifiers EH Key Location/Qualifiers ET Peptide 122 ET /label: signal sequence ET flotein 12 ET /label: mature NPBR ET /label: mature NPBR	UUI 12 (10572 standing DNA; 1947 HP. (10572; (10572; (10572)	Db 727 ngudnsnkunvnkvingningningninsndrinnnunnunnmanicw 769	Ob 667 surstannddnmanyakkuntunnnasjonnattymmaudvysnyanannanasjonym : :: :: :: :: :: :: :: ::	Db 607 naundsmindwimnrysinnidizkgmannhnsnneshgsikssnevvdarnvnkntdygna ::::::::::::::::::::::::::::::::::::	bb 547 wwaikhenkkianetiiwennakhmidennahetinngsendannaenetiyenigsend :: :: :: : : : : : : : : : : : : : : :	Db 487 nasmnwiniwnningishrylkgagsrntisnrgssygsnmtahgkynnnantghnkgn 	Lb 427 wykganns dichobbiddhas bktanothanvangtgnt nomb gyssnonorkomonko :::: : ::: ::: : : : : : : : : : : : :	Db 369 ng rryhg-vtgavvmdkandentdavnwamgdndsgdnanaihysgankanwwtgrann :::: ::::::::::::::::::::::::::::::::	Db 310 nninnniarndngvingnsmmnnagenyd-gminyanvnnntnnnggtridgnirivikm	Db 250 yvunyndvighsniagntratginwndnitinnananinanntvnvntyrnnnnnynnn :: :: :: :: :: :: :: :: :: :: :: :: ::	Db 190 amgsnnsvnhnvyarnnggnnnathnnrangrnvyncgnnnmnhnnnnnanrnnntngd : :: :: : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : : :	130 sakodhyrtnertgasankoganeetahghanwisraannyadariddinhyatnagean	三三:
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Claim 3; Fig 1; 49pp; English.
The sequence was derived from the DNA encoding natriutetic peptide
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                                                            affinity chromatography. Antibodies with affinity for NPRB can
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ns-MAY-1988.
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                                                                                                                                                                                                                                                     occurred singularly in any given mutant.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         misincorporation, completion of molecules and screening.
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Release 2:12 John F. C.lling, Birolapiting Beseatch Unit. Copyright (2) 1993, 1994, 1287 "Missessity (E.E.Dirlingh, M.F. Distribution rights by IntelliGenetics, Inc. *******************

(M.T.)

MPeredulin cha. cha. database search, using Smith Waterman algorithm

Run on: Wed Dec 17 15:03:48 1997; MaxPar time 125.65 ferrings 959.389 Million dell updates/sect

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Title: MIS TW 5/2 TO A F

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Scoring table: TABLE default

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Statistics: Mean 9.076; Variance 5.133; scale 1.768

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution

SUMMARIES

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                               presence of a single intron of 1134 bp at a posm between nucleotides 88 and 89 or the cDNA, which is 4 nucleotides 5' to the initiation codon. The cDNA is contained in class p32103, Plasmid p92103 was deposited on October 16, 1992 with the ATCC and bears
                                                                                                                                                                                                                                                                                                                                                          plant lipid composition
Claim 3, Page 136-138, 147pp; English.
The gene corresp. to 066068 was isolated by sorpening Arab
genemic DNA libitary using radiolabeted pSF2b cDNA insert.
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Produ. f hydroxylated fatty avids, e.g.: The Delete the Trevolce acid - in genetically modified plants such as rapeseed, flax, sunflower or outstand, contains fatty avid hydroxylase gene Claim 4; Page 67 68; 105pp; English.

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15-DCT-1993; HN9987.
           sense and antisense primers, respectively. NO and RESA/B corresp. to attractives of Ass [0] [09 and 48 A/E, respectively, of #53697, which are conserved in most microsomal delfa-12 desaturases. A PCB product of 70Mpc was purified and used as a puber for screening the corn cDNA library. A plaque was purified and found to encode microsomal delta-12 desaturase transacted at the 3′ end. This cDMA
                                                                                          plant lipid composition. Oldin 3: Paye 104-176; 147gg, English.

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Sequence 1462 BP; 382 A; 332 C; 306 C; 442 T;
wherein the nucleic acid identity is 90% or greater to i66070 is claimed
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17-NOV-1992: US 977339.
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(#150) (#3124)
Key Location/Qualifiers
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Fatty acid; desaturase; lipid; unsaturated; transgenic plant; ss.
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망 γŞ Q 망 Ŷ Ş B Ş 7 VΩ 묽 Q 망 밁 밁 Query Match 27.55; Bust Local Similarity RO.65; Matches 440; Conservative and related products. Sequence 544 BP; (see also 172316-17) tasked on regions of homology between castor kappa hydroxylase and Arabidopsis doll2 desaturase (fad7). A proposic clone, pleasing 1727011), itselfated saking pleasy2 is pucker encoded a kappa fatty acid hydroxylase (895579). Transperior plants that express pleasy3 contain altered levels of hydroxylated fatty acids, e.g. Produced hydroxylated fafty acids, may richoleic or lesquerolic acid—in genetically modified plants such as rapeseed, trax, sunflower or outous, and fafty acid hydroxylase generally. (AAA) Loss (Loss)? (TSM12) and pleas? (TSM13) were obtained the desquerella fendler: library by PCB amplification using primers Claim Brown F, Somervil WPI; 96-200914/20. Rionn P, Samerville C, Van De Loo oil palm; cilseei; seed lesquerella tendleri. sunflower; safflower; entten; euphea; soybean; peahat; coconut; lesquerolic acid (14-hydroxy-ll-eicosemoir acid), (SOME?) SOMERVILLE C. (BROU/) BROUN P. 25-SEP-1995; Ul1855. 298 338 7.5 535 475 775 18 121 1 tataggeaceggaggeaceatteraacumaggatemetegaaugugatguagtattigte 60 totygoagaccotacaatggt --- ttogottoccatttottoon an gotoctatotac ARCGACCROSAGOSTOTICACATATATATOTIC CACGCTGCCATCCTCGCCCCCCCCCCTAC 714 остительностичествення получений по aangaeegtiguaegent edagattit anat ni hitgat got ggliat tiet ageegt et git tat CCCAAGAAGAAGTCAGACATLAAGTGGTACGGCAAGTAGTGAAAAAGTGTTTTGGAAAGC TACACTCATEGACGCCACCATTCCAACACTGGCTGGTTGGTGAGAGAGGAGGAGGAGTGTTTGTC 474 4; Page 66; 105pp; English. 5(milestry 80.6%) corn; ss. oll, rapeseed; Crambe; Brassida jainma; Caidla; -314536 135 A; Score 319; 0; Mismatches 103; 153 C; 9; LB 21; 5.3e 211 105 G; , Length 544) in seed oils, flax; Gaps

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04-APR-1996,
25 SEP 1995; ULLESS,
26-SEP-1994; US 3145
11-OCT-1994; US 3209
                                                                                                                                                                                                                                                                                            Kappa fatty and hydroxylase thre flesh'
Kappa fatty and hydroxylase; lesquerolic acid; transgenic plant;
unlesed; seed pil; rapeseed; framke; Brassica juncea; datoia; flas;
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WPI; 96-200914/20. Broun P, (SOME/) SOMERVILLE C. (VLOO/) VAN DE LOO F J. (BROU/) PARTIES ON TARKE DAS OF BROUN P. Somerville C, 314596. 320982. Van De Loo Fi;

Brodn, of hydroxylated fatty acids, e.g richeleic or kesqueteli cDNA clones pleag2 (T27012) and pleag3 (T27013) were obtd. from a Leaguerella fendleri library by PCR amplification using primers Claim 4; Page 65-66; 105pp; English. sunflower or cotton, contg. a fatty acid hydroxylase gene acid — in genetically modified plants such as rapeseed, flas

contain altered levels of hydroxylated fatty acids, e.g. lesquerelic hydroxylase and the Arabidopsis dell2 desaturase (tad2). The gene corresponding to pless2 is highly and specifically expressed in seeds of L. fendieri. A genomic clone, pless2-Hyd (T27011), was acid hydroxylase (R95579). Transpenic plants that express plesq2 acid (14-hydroxy li eleosemole acid), in seed cils, waxes and isolated using plesq2 as probe, and shown to encode a kappa fatty (See also T27016-17) based on regions of homology between castor kappa

Best Matches Query Match related products. Local Similarity 417; 543 BP; Conservative 24.2%; Same Lot; Lb 21; 77.2%; Prod. No. 6.695 182; . ₹ A; 6; Mismatches 120; Indels 3; 177 (; 109 5; Sength 943;

В Ş 밁 481 421 67 7 caccggcggcaccattccaaccastggatccctagaaaaagatgaagtctffgtcccacct 66 CATOSACS CACCATTOCAACACTOS TOO TOO AGAGAGAGAAAAGTGTTTGTGTGCAAA

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72 S Ş 3 문 Ş Ъ Дb Ş В Ş 72 304 facegttaegetgetteaegaggattqaetgetafgatetgeqtetaeggagtaeeggett 363 661 I consideration of Assaulative And the contraction of the sale and the sale of the contraction of the sale of 601 деместта састанателентурателника (СССА) без тетаке декатетика (СССА) без 484, qantatiggaatinttigaanaaggtigtittisanaanataanaganansosacqtiugsacaceac, 543 541 АТСТТААССЕННО АСТЕСАСТОТО ВЕСТЕПНОТА В ПТАСЕТТЕ ХАСЕТСТВ ВЕС 127 ytyttaacayttcaytttateetegyytyyeetttytatetayeetttaatyfatcayyt 186 CTCATTCTCAATCCCTTCTTACTTTCAICA (IA II) ACACACACA ACACTTCCCTC PARTAPHARTER THE PART OF THE WIND OF THE WASTERNAMED TO THE PARTAPHART OF THE PARTAP egtigaacgtetecagatatacatotoagatgotigetattetagetijtetijt!utiggtett 303 agaecttatgatggt---ttegetteaeatttetteecteatgeactatettiaeggae = = = _ = 34 0 180

/*tag= Rinings 09-NOV-1994 (first entry) 066072; W094]]5]6-A. Patty arid; desaturase; hpid; uncaturated; transgenic plant; ss Sequence of castor microsomal delta-12 desaturase in the cDNA Q66072 standard, CDNA; 673 plasmid pRF2-1C. oomununis. Location/Qualifiers

P-PSDR; R53701. Lightner JE, Okuley JJ; WPI; 94 183515/22. (DIPO) DI PONT DE NEMORES & CO 15-00T 1993; 009987. 17-NOV-1992; 05-977339.

plant lipid composition Claim 3; Page 129; 147pp; English. Surges that fatty and desaturate energines i permit alteration

Polysomal mRNA was isolated from castor beans of stages I II (I) (AF) and then custor beans of stages IV V (2010) DAP). Thing of each mRNA was used for separate PT PVP inactions An isolated nucleic acid fragment wherein the nucleic acid identity was gel purified and closed into a vector to create plasmid pAPZ 10. The TPO tp. insert in pREP 10 was sequenced (044002) of approx. 700 bp was amplified from both stage 1-II and stage IV-V mRNA.The amplified DNA fragment from one of the reactions desaturase primers NS3 and NS9 (Q66075, Q66076). A DNA tragment hexamers and the PCR reaction with degenerate delta-12 The referse transcriptuse reaction was primed with random and or greater to sequence 266001 is claimed. A method to

Db. 9 Ы Ş В Ş 문 Ş DЬ Ŷ Вb 9 Q Ŷ Ŷ DЬ P Ъ Ŷ 묽 Ş Э Ъ 888888888 Best Matches Query Match oligos based on the conserved sequences; and using the oligos to sequences in \$53641-853702 and other tatty acid desaturase sequences; and related enzymes is claimed which comprises: comparing AA isolate nucleic acid fragments encoding fatty acid desaturases desaturase-related enzymes. isolate sequences encoding fatty acid desaturases and 478 ttggtggtgaattoattocttgttotyatoacatttotgcagcatactoaccctgcattg 537 601 421 identifying conserved sequences of 4 or more AAs; designed degenerate 961 901 865 538 3 541 481 301 781 141 181 121 y Match 23.3%; Score 264; DR 10; Local Similarity 71.3%; Pred. No. 1.03e-173; 2 AAGAAGTUAGACATUAAGTOGTACGGCAAGTAUUTUAAUAACUCTITGGGACGCACCGTG 540 gtagttggtettateetaeaeteetgteteettgteeettattttteatggaaaeaeage 120 CICITC cttttc 663 ATGTTAAGGGTTCAGTTCAGTTCAGTCGGGTGGGGTGTGGGGTTTTGGAGCTTAGGGTCTCGGGGG adaut tigdright outsicht toadstag philipphotor ytabenlagdut tidaat git thouges i 200 aagaaatotagtateogttggtattoouuutaeeteaaeaaeeeteeaggtegtateatg CATCGACGCCACCATTCCAACACTOGCTCCCCCCCAGAGAGAGAAGAGTGTTTGTccccAAG catogoogacateatteeaacaeagyyteeetygaacgygatgaagtytttytteeeaag 180 475; Conservative 673 BE; 154 Å; 0; Mismatches 188; Indels 3; 154 150 67 Length 673; 200 T) Sales 477

RESULT 11 ID Q10572 standard; DNA; 1047 BP

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Query Match 8.7%; Score 100; DB 2; Le Best Local Similarity 11.0%; Fred. No. 2.22e-50; Matches 84; Conservative 220; Mismatches 449; Chang recoptor F, NEER, having granyl cycles (GT) activity and protein kinase activity. The PRA can be inserted interpretability factors for the protein. The protein, ept. after being majoral to protein NERB analogues. The protein has a mol wt. of 11% NO (calculated Min 14,9%). The protein (or variants) can be used in the feet ent of natification protein decisions and also to isolate keptudes using fifting the protein contains. Matrioratio protein receptor R for diagnosis and treatment kidney failure, heart failure, hyperaldosteronism, glaucoma also be prepd. affinity whromatography. Antibodies with affinity for NPRB Claim 3; Fig 1; 49pp; English. N-PSDB; Q10324. WPI; 41 036711/05. Modified -site Modified The sequence was derived from the DNA encoding natriculatio peptide ₩u4100292-A. Modified -site 195..197 Mudified -site 35..37 NPRB; ANP; BNP; CNP; kidney failure; heart failure, protein kinase; Human Natifuretic Peptide Receptor B. Q10572; (GETH) GENENTECH INC. 23-JUN-1989; /label= N-glycos site /label N-glycos Modified -site 244..246 /label: N-glycos site /label- N-glycos_site Modified -site 161..163 Modified -site 24..26 /note "GC and protien kinase activity" /labe!= Protein Homo sapiens. hyperaldesteronism; glaucoma; guanyl cyclase. 09 APR-1991 (first entry) 22-JHN-1990; HIII 8586 10-JAN-1991. /label= N-glycos_site /labe!= N-glycos_site /label= N-glycos_site /label= N-glycos site /label= transmembrane domain /note: "binds natriuretic peptides /label= extracellular domain /label= mature NPBR /label= signal sequence eptide M, Goeddel D, Lowe cytoplasmic domain - s 1 + p M F G 1047 EP; US-370673. 600..602 349..351 479..1047 456..456 23..455 hodation/Qualifiers site 87 A; U ;5 °; for diagnosis and treatment of A, B and 83 G; Length 1047; :<u>:</u> ;; lindels 10; etc. Gaps

TD AC DT DE KW KW FT FT FT FT FT Ę 7 Ç F Db Ωb ÷ Ç Бb Çp В DЬ ç В 99 Ç Ç 당 þ Ç DЬ Ç Бb Human Natriuretic Peptide Receptor B. NP; BND; CMP; kidney failure; heart failure; protein kinaso; Q10572 standard; DNA; 1947 BP. Domait Q10572; Protein Homo sapiens. hyperaldosteronism; glaucoma; guanyl cyclase. 09-APR-1991 (first entry) /label= mature NPBR /label= signal sequence Peptide 55/ (13) 247 3/15 487 365 427 543 66i 727 123 187 424 369 ng-rryhg-vtgnvvmdknndrntdnvnwamgdndsgdmnnaahysganknnwwtgrnnn 426 484 Tottpottpaaacacaaaaaacarttigatottttgigaaaaaaaaaaaaaaaatattuaaaapaattaatatti 425 110 190 130 721 X, $70~\mathrm{mingacsnynamisavdirknyhdirdiringngevynaasvarnashwi<math>\mathrm{minmtagavasyn}$ is 29agnánsnknnvakvingninyninsaditannannvanmaiew 769 shistannddinanyaaanntanninsynniattymiaadvyshynaniaanisynnyn 726 CTATGATGTGCCCAGATGAGGTAGGAGAAAAGAGGGATCGAGGGATCGAGGGTTTGAAAGAGT 128 CONTRATORISTICS OF THE AGAINST THE TRANSPORT OF THE PROPERTY O GOGGTGGGATTGCTTTTCTTGAGTTCTCCGACAGTGAAGGGGTGGTGTCGCA-GGTAAG nnnndsnnndwmnrysnnndinvkgmanninsmassligsnikssnovvdsrassikint dygna - 666 vvankhvnkkrnnntrnvnnnnkhmrdvnnnhntrnngacndnnnnenvtnycnrgsnnd $nasmow \verb|rnrw| mnnnngnsnryhkgagsrntnsnrgssygsnmtahgkynnnantghnkgn$ GATICACTETACTTECCASIONGANOTANOCATANOGAGICAAOGAGIGOAAGATGA-GOOTG 366 uninnerarnde pringissimminagenyd-grinsyanvnint ninggt rindgirnvnkm 268 CATCACGGTGCCTCCCA-AAGGGTGTTCAGGTACTTGCGGTACCACTTGATGTCTGACT PTC=0003A0400TTCAA00TTAA0TA0AA44600A600GA6A6T6AA0T6AA0T6TTAA 544 $ann gsnnsvnhnvy arnnggnnnathnnrangrnvyncgnnn \verb|mnhnnnnnnanrnnntngd|$ GGTCGTTGTAGAJGGGA—GCGTTGGGGGTGTGAAAQGGAAAGGGAAAGGGGGCGGTGGTAAGGT 603 -ACCCAGACGCGGGTTAGGAC-GCAGCCCTGGGAAGGCCAGTAGAGAGAGGCAGGCGAAGT 248 yennyndengasaragatratgrawadartranaaanraach esemtyrnannanyaan :: 23..455 Location/Qualifiers --:: :--: -:::: .. ------606 485 200

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Mutches 66; Conservative
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S⊷queno≻ 1647
                                                                                                                                                                                                                                                                                                                                                                                      NPRB analogues. The protein has a mol wt. of 115 kD (calculated Mr 114,900). The protein (or varietle) can be used in treatment of
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Claim 3; Fig l; 49pp; English.
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                                                                                                                                                                                                                                                                                                                                                          affinity dhromatography. Antibodies with affinity for MPRB can
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kinase activity. The TNA ran be inserted into expression vectors
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                                                                                                                                                                                              Similarity 9.9%; Fred. No. 5.57e 29; 66; Conservative 191; Mismatches 199
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24 MAY 1993; 108325.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oligonucleotide probe MK14-A
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See also ©51735 45 and ©51747 59.
Sequence 91 RP; 5 A; 17 C; 15 G; 4 T;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oligonucleutide probe MK14 A consists of much stides to 90
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 3; Page 14; 23pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 93-378844/48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Shank DD,
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                                                                                                                                                                                                                                                                                                                                                                                                           cross reacted to a few mon-mycobacterial spp.
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     1; Conservative
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48; Mismatches 2
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                                                                   Oligonucleotide probe MK14-A 
Oligonucleotide probe MK14-A 
mysiki terisi discount districts
                                                                                                                                                                                   051746;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 E.coli beta-galactosidase. The wild type sequence was obtained as single stranded template and an oligonucleotide was hybridized to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /*tag=
Synthet.ic
                                                                                                                                                                                                                       Q51746 standard;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             possible nucleotide positions within a specified region. The variable 3' ends generated in this way are used as primers for restrict that tip the light because mistrocipes and by the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lehtovisti P, Etowico J, Mososia A, Ramford d, Nososkaitsko
₩PL, 83-279927/40.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   03-APR-1987; US-034819.
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                                                                                                                                                31-MAY 1994 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    See also P80575.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       amplified and then expressed in a suitable boot volton openem.
The sequence covers all 176 diffit base substitutions, most of which
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Random point mutations were introduced into the alpha tradment
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; p; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (SUSO) SHOMEN SOKERT OY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                08 NOV 1990 (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                occurred singularly in any given mutant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              it to generate a popu of DNA molecules which terminate at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     misincorporation, completion of molecules and screening.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        by preph of single stranded template, annealing a primer, elongation,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Introducting early proof mutations only ourselve
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                                                                                                                                                                                                                                                                                                                                                                    POPPER OF THE CONTRACT OF THE 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Similarity 15.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             204 BP;
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Release 2.IP John F. Collins, Biocomputing Poscarch Unit. Copyright (c) 1993, 1994, 1944 University of Edinburgh, Wik Distribution rights by IntelliGenetics, Inc.

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H.M.; Somerville, C.B.
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#title

Cloning of higher plant omega-3 fatty acid desaturases

Plant Physiol. (1993) 103:467-476

#accession *contents

JQ2339 cDNA: GMD

##cross references CB:L22965 ##molecule_type mRNA ##residues 1 453 ##label YAD

Ç Ş В Ş DЪ Ş Э S 8 Рb Ş СР SUMMARY ENTRY Ş 8 Ş REFERENCE ACCESS IONS ORGANISM Matches 125; Conservative 82; Mismatenes 95; Indels 25; Supe 19; Query Match 23.75, Store 717, DB 16, Leigth 379; Best Local Similarity 28.28; Freq. No. 5.215 187; #accession #title # jout nai # authors 246 (femaldastyllMaghabalgwy, ghowoylity, toldratyjlfoodbhaf gthodh 248 (femaldastyllMaghabalgwy, ghowoylity, toldratyjlfoodbhaf gthodh 248 (femaldastyllTrudji Theo lifetic for the filetic f 204 FOR BUILDING THE THE THE TOTAL TOTAL TOTAL TOTAL TOTAL TO THE TOTAL 1: THE TEST OF THE ##cross-reterences DDBJ:D26509 329 191 egs 320 304 191 137 ##residues ##status 305 hltpqiphyhlvdatraakhvlgryyr 331 38 79 hlfpqiphyhlreatkaakpvlgkyyr 330 | {::|||| ||||| ||:|| ||: ifvmwldfvtylhhhgyokklpwyighcwsyligglttvdrdyglfnnihhdi gthvih 303 AWPLYWACQGCVLTGVWVIAHECCHHAESBYSWIDGSVOILHHSESLVFYESWEYSHESH 144 HPFSTMPHYHAMEATKAIKPILGEYYQ 346 HPESTMPHYHAMEATKAIKPILGEYYQ 346 -gs---hinpysdlfqpher k yrvtstlowtrmaalllylctafgslqmthlygapyl 244 --plywaiggtmtwaifvlghdeghgsfsdsqllnnvvghilhsailvpyhgwrishkth 136 httpsshiapseihliatstioweimlativylsfledp vivihv gjopji 848 omega-3 fatty acid desaturase. Common telesco (cv. SRI) #formul_nume Nicotlana takacum #common nume common telesco-14-May 1995 #sequence_recision 14 May 1995 #foot_charge #length 379 #mulcoular worght 44149 #checksam 1940 Hamada, T.; Kodama, H.; Nishimura, M.; Iba, Gene (1994) 147:293-294 Cloning of a cDNA encoding tobacco smcga 3 fatty and JC2555 desaturase. 14-May-1995 preliminary 1 379 ##labe 379 ##label HAM #type complete

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ACCESSIONS
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Perez-Paus, I., Kimiey, A.T.; Erti, W.D.; Booth Jr., J.B.;
Schweiger, B.; Stecca, K.L.; Allen, S.M.; Blackwell, M.;
Beiter, R.S.; Carison, T.J.; Russell, S.H.; Feldmann, K.A.;
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Ohmori, M.; Murata, N.
Flat M. L. (1994) 26:219-263
                                                                                                                                                                                                                    JQ2335
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                                                                                                                                                                                                                                                                                                                                                   omega 3 fatty acid desaturase (EC 1.14.99.) GMD - soybean
#termal_numerCl_fine max #firmin mare physical
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Pierce, J.; Browse, J.
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Pred. No. 9.369-104; Indole 29; Gape 21;
85; Mismatches 190; Indole 29; Gape 21;
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Ş Ş ENTRY Ş ď Ş DЬ Эb 5 Ş Эb KEYWORDS COMMENT OKGANISM Ş 8 COMMENT REFERENCE ACCESSIONS TITLE KEYWORDS CLASSIFICATION CLASSIFICATION Matches Query Match 22.70; ILLE 681, IB 5; D. Best Loral Similarity 38.33; Field No. 6.16-101; #accession #contents ##cross-references GB:LLLJ%0 ##residues 379 lfpqiphyhlveateaakpvfgkyyr 404 151 ##molecule type mRNA 321 PFSTMPHYHAMEATKAIKPILGEYYQ 346 263 ktg--shfdpssdlfvpnorkdv-itstucwaumlgllvglqfvmgpigllklygvpyvi 314 œ, 25 POETERETVOECERALISHISHISHSCHEUTSCHOLDLAGISYLKALTERIOLEHIOLEH 84 hybhyhaendeswhill be kif isldt viimliftapfpilafpvyl fsis (ej 262 AWPLYWACQUOUNDSOWNIAHEDIBBAR CONGWIND CALLING BOTH THE STREET 144 vwplywaaggtmfwilfulghdoghgefoureklosoughlibssilopphgwiisher* 210 This enzyme introduces the third double bond in the bloopithesis of 18:2 and 18:3 fatty acids which are important constituents of This enzyme introduces the third double bond in the biosynthesis 125; Conservation plant membranes. plant membranes. 18:2 and 18:3 tatty acids which are impostant constituents of FQ0812 #superfamily omega 3 latty acid desaturase cDNA: BND Yaday, N.S.; Wierzbicki, A.; Aegerter, M.; Caster, C.S.; Perez Gius, L.; Kinney, A.J.; Hitz, W.B.; Beoth Jr., J.B.; Schweiger, B.; Cerce, F.; Alber, C.M.; Kirkweil, M.; Reiter, R.S.; Carison, I.J.; Russell, S.H.; Feldmann, K.A.; JQ2335 oxidoreductase Cloning of higher plant omega-3 fatty acid Plant Physicl. (1443) 103:467-476 oxidoteductase #length 404 #mulecular-weight 46617 #checksum PQ0812 05-Aug-1994 #sequence revision 05-Aug-1994 #text change omega-3 fatty acid desaturase (EC 1.14.99.-) ESC - Capt # Johnston 463 | #molecustry Wolston 6336; | #obooksym #superfamily omega=3 latty actd desaturase ∯formai_hame brassica hapus #common hame fape Pierce, J.; Browse, J. 21-Mar-1996 1-404 ##iabei YAD #type complete Sep Milmarithes 1929 Indels (23) 12 Table 1137 desaturases

Query Match

33.68:

Score 692;

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81 -wliyepiqgtmfwalfvlghdeghgsfedspllnslvghilhssilvpyhqwrishrth 139

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Bost Good Similarity 27.1%, Fred. No. 2.256-100;

177 Ş Ç \mathcal{S}_{i} 7 Z Ş KEYWORDS ORGANISM TITLE 30 Ç 12 9 Дb SUMMARY CLASSIFICATION MME REFERENCE ACCESSIONS Best L. Ca. Query Match #accession *authors ##molecule_type_mRNA ##residues 1 386 201 afftylmarsfyk kas S.W. CALLO, HAST VENYBROOM SALES SHIRWARD STORES A LUX. 316 mihhdi gehvihhlipqiphyhlvoarosakpvigkyyr 354 256 pmymikiyvipywinumwidivtyihhhojhodkipwyrgkowsyliggittldrdyglin 315 × 1949 CHEAN ELEGENT TO SECULO POPULAÇÃO POPULAÇ 130 CLN DE WELCHECHECH COLECTIVE BEREICHEN DE CLIVE CONTINET VAN DE 188 27 psapppfkiaeirasipkhowykmpwrslsyvlrdvlviaalv aaaihfd---nwl--1 80 TO ACCEPTATION AND TWAT TOWN TOWN THE COMPANY AND THE TOWN THE COMPANY AND THE TOWN THE TOWN THE TOWN TOWN THE T 1010 | 1 1 2 1 101 1000 HI HI ... II PITTITI | 1 25 PRETEMPTYOGLIKKAIMPHRIKKSIMBSIMBSIMBSIMSCEYTXATTYEFILDHPLDYF 84 33 ssppiesepktgridpyapppfnladmaaipkhowvkopwksmsyvvrelaiv--fala 90 - : : : HATTIST AND TOWN OF THE STAME siduas (1980 **)abo) YAD 125, Conservative plant membranes. 18:2 and 18:3 fatty acids, which are important constituents of and the third double bonds, respectively, in the biosynthesis :: :: :-JQ2338 Plant Physiol. (1993) 103:467-476 Cloning of higher plant omega-3 fatty and desaturases. oxidoreductase omega-3 fatty acid desaturase (EC 1.14.99.-) CM3 - soytean #formal mame Glycline max #common_mame soyteam 30.5ep-1443 #sequence_max #common_hame soyteam #longth 380 | #molecular-weight 44185 | #stocksum 1659 #superfamily omega-2 fatty acid desaturase Yadav, N.S.; Wierzbicki, A.; Aegertor, M.; Caster, C.S.; Perez-Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.R.; Schweiger, R.; Schweig, K.L.; Allen, S.M.; Blackwell, M.; Rocker, R.D.; Subseq, T.J.; Russell, S.H.; Feldmann, K.A.; Pierce, J.; Browse, J. 62 Jun 1995 -----# yyro may be 8); Mismatches [12; Indels 21; Gaps hehenapitnihehedqitishacilavitcibryaagqg Store 681; DB 5; Te 248

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##mate sequence extracted from NCBI backbone
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J. Biol. Chem. (1993) 262-24-99 25124
A gene encoding a chloroplast omega-3 fatty acid desaturase complements alterations in fatty acid desaturation and chloroplast try scales file mut of Arabid paid.
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Closefy of higher plant incga 3 fatty acid desatitions.
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                                                                                                                                              #length 446 #molecular weight 51174 #checksum 4653
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Arabidopsis thaliana
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Score 678, 58 %, Length 946, Pred. No. 1.27e-99;
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7 77 S \mathcal{L}_{i}^{i} Ş Ş В Ş 문 7 12 윤 밁 JITIT. 3 Ý. < ACCORNIC ACCESSIONS NJ IMWO de 문 Ä REFERENCE Bost Leral Cirilarity 29.0%; Matches Query Match Materbox 106; Conservation 107; Mismatches 109; Ind-18 100; Caps 15; #accession # journal * 1.0 5.75 #title ##residues 261 TAMOTEGONE PARAMONTANCAMINACIAMIN II4 [Chamrilbothbaytroods-bawaptt pol ydd spatikawyraingk]-w-- 165 ##status 249 warspyk kys 139 Lin Diskinsk Lysking (Edwid St.) (1994) 193 (199 313 TUTHVAHHFESTMEHYHAMEATKAIKETUGEYYQ 346 364 -gthvihhlfpqiphyhlveateaakpvlgkyyr 396 255 FYSVSTILIVKSKIVKITYIQD THES LEHYDSSEMDWERGALATVDRUTGILMKVEHNI 312 304 lygipywinumwidfutylbbbgbedklpwyrgkewsylrgglttldrdyglinnihhdi 363 195 AFAVOGRITĀGGĪ ROBĪBIJAM INNEREBIÇITIEDACILAVOTILIBITĀĀGĢĀVĀSMYC 254 THE ELIMENISTS AMED INVESTIGATION OF THE WALL AS HER PROPERTY OF THE WALL AS THE PROPERTY IN THE WALL AS THE WALL TO EXCLUSE THE TRANSPORT OF THE TRANSPOR 81 --- July 1 [dy.) appy fuladicasi plan wwkspwks lsywyrdvaiv -falaagaay- 137 56 yallarapwylllpv-wfl+qttltgffvighdoghrstsrknwvnnlvghlaflp-liy 113 81; Conservative 66; Mismatches 106; Indels 26; Caps 543770 543771 543771 1 347 ##1abel SAK #1org+b 347 ##-1e-olar weigh 40660 # Hundboum Cakan 1., T., Waia, B., Maskida, T.; Chemit, M.; Morsha, M. Plant Mol. Baot. (1994) 24:643-650 Tellin 12 desciouses Cycle bet the erg op. (porton) #from 1 and Cycle bet the sp. # from the booting 20 det 1994 #september resisted 20 det 1994 #test, change 543771 Identification of conserved domains in the Delta-12 20. 0x+-1994 desaturases of cyanobacteria. preliminary : hybpdcdlflpkcikdvltstacwiamaslivninfrigpigmlk 303 8.4%; Score 254; DB 16; Length 347; 29.0%; Pred. W- 3.186-23; #type complete ...

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SUMMARY REFERENCE ACCESSIONS ORGANISM #accessium #journal #authors ##residues ##status _ 543772 Sakamoto, T.; Wada, H.; Mishida, I.; Obmori, M.; Marata, Plant Mol. Biol. (1994) 24:643-659 Identification of conceeved domina in the Polta 17 20-Oct-1994 £43772 #length 350 #molecular-weight 41283 #checksum \$43770 #formal_name Anabaena variabilis Delta-12 desaturases 200年の101年 1969年 - 果のでAssetsColor_100名というの 大川-1001年 1984年 - 果まら大士 - You disper desaturases of cyanobacteria. preliminary 1-350 ##label SAK #type complete Anabaena variabilis

Query Match 8.43; State 255; EW 16; Daught 350; Beet Local Cimilarity 27.95; Fred. W. J. Lette 25; Matches 75; Conservative 60; Mismatches 113; Indels 71; Caps

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-123 mbhbhlichideánamhplipevíasm ghligisí hlím i girlmmigsvylmasv 177

DЬ Ş 142

Ş 178 h-fd--wr-kfkvkdq--ad-vklsvavv-vlfaavafptli-att-giwgfvkfwfvpw 227 201 BPYDOJEKTHEHRMALYMBREELQILINIAAILAVOIGLEEYAARQOVASMVEERVEL PE

Ş Вb 167 228 lgyhfwmstftivhhtypdvp-feaenkwheamaqlfgtihedypkwvevlchdi-nvhv 285 LIVNGFLVLITYLDHIHPSLPHIDSSE-WEWERGAL-AIVEREIGILNKVF-HNITEIHV

Вb 286 phhlstaipsynlrlayssigenwgdylh 314

318 AHHEESTMEHYHAMEATKAIKEILGEYYQ 346

12

TITLE ACCESSIONS ORGANISM 28-Oct-1996 553309 #formal name Spinacia oleracea #common_name spinach 24-031-1446 #segrons_revis. n 28-031-1446 #rext_Sorp n-6 fatty acid desaturase precursor - spinach #type complete

REFERENCE #journal #authors Schmidt, H.; Dresselhaus, T.; Buck, F.; Heinz, E. Flant Mol. Biol. (1994) 26:631-642 \$53309

#accession **residues ##status 553309 preliminary 447 ##label SCH

Purification and PCR based cEWA clening of a plastidial m

##cross-references EMBL:X78311 #length 447 #av local and 11. 51306 #checksum

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Вb Query Match 8.4%; Score 255; DB 16; Length 447; Bost Local Similarity 27.6%; [ivil No. 1.17% 23; Matches 81; Conservative 68; Mismatches 116; Indels 26; 127 wgtvlisvtsy-algif-miakapwyll-plawawtgtaitgffvighdcahksfsknkl 183 Caps

Ç 58 WOLLLASOFYEATTYEELLEHELSYFAWELTWAYQOOVITOUWVIAHEOOHHAFSDYQW 117

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ORGANISM DATE REFERENCE STILL ENTRY <u>...</u> \$49331 #formul_nume Spinucia oberates #common commospinach 16 Feb 1995 #e your selection 12 May 1995 #foxt_change 549551 n-6 fatty arid desaturase - spinach 12-May-1995 #type complete

#authors The Last Conf. #submission ##residues ##molecule_type mRNA ##status submitted to the EMBL Data Library, March 1994 549331 Schmidt, H. 1-447 ##label SCH preliminary

SUMMARY Query Match 8.0%; Score 243; DB 10; Length 447; Best Local Similarity 27.5%; Fied. Ro. 2.09e 21; Matches 80; Conservative 69; Mismatches 116; Indils 26; Gaps ##Prioss-trivienses EMRG:X78311 Of #length 447 #molecular=weight 51143 #.docksum 6764

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Ş 58 WDIIIASTETTAATTYEPIARHEISYEAWELIWATQOTVIJTOVWVIAHEIGHHAESDYQW 117 :: _ -:: .. --=

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296 A-TVDRDYGILNKVF-HNITDTHVAHHFFSTMFHYHAMEATKAIKPILGEY 344

HATRY TITLE SHMMARY KEYWORDS REFERENCE ACCESSIONS ORGANISM ##molecule_type DNA
##residues 1 351 ##label MUR ##cross-references EMBL:X86/36 ##status 21:Mar=1996 554259 554259 #Jength 35] #mojecular-weight 40428 #checksum 6391 oxidoreductase 554259 08-041-1995 #sogroups reviewer of the 1995 #text_charge \$54259 #type complete peltai2 desaturace (Pr. 1.14.94) spirulini pluterals S54259 pretiminary

Ş Ş Š 3 Ş B JJ. Вb Query Match 7.8%; Score 236; DB 9; Length 351; Best Local Similarity 27.0%; Prod. No. 2.936 20; Matches 73; Conservative 66; Marmatches 186; Indels 25; Gaps 287 183 wtk-feg- k-q rqqvk tss ; ;;| ; ; ; ;; 199 SCHEYDOCHHCHEHENAPIYNOKEKIQIYISDAGILAVCYGLEKYAAGQGVASMVCETGV 258 125 hnghhkytnrmeldnawgpwrkeeygnagkfmgytydlfrgrawwigsilhwa-sihfd- 182 82 SYFAMPLYMACQGOVLTGOWVIAHEGGHAEGGYQMLDDTVG LIFHSELLVPIFSWRYS 140 66 pwtllpvvwvftgtaltgttv:ghdeghrsts:nvwvndwvghilflpily-pfhswrig 124 HRSHHSNTGSLERDEVEVERERSDIRWYSKILW & FLGRIVMLTVQFTLGWELYLARNV 198 llv igaaai-a--fptmiltig--vwgtvkiwvi 227
| : |: |: | | : | : | | : | | : | |

ORGANISM DATE ENTRY REFERENCE ACCESSIONS RESULT #accession #title # Journal ##status 15 Sakamoto, T.; Wuda, H.; Nishida, I.; Ohmori, M.; Murata, Plant Mol. Biol. (1994) 24:643-650 20-Oct-1994 \$43770 Delta-12 desaturases Synochocystis sp. (6006714) #formal name Synochocystis sp. #common_name 9006714 20-0-1-1994 #sequence revision 20-0-1-1994 #text_hande S43770 \$43770 Identification of conserved domains in the Dolta 12 desaturases of cyanobacteria. preliminary 1 349 ##1----#type complete

317 VAHHPESTMPHYHAMEATKAIKPILORY Y 345

##residues

349 ##label SAK

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SUMMARY

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#length 349 #molecular-weight 40340 #checksum 5411

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÷ Query Match 7.3%, Source 222, 28.16, Length 349; Best Local Similarity 27.5%; Pred. No. 5.45e 18; Matches 43, Source value 43; Moranthes 40; Indois THE THE PROPERTY OF THE PROPER Text at Eppling the transplay (additional place) by the control of the second of the s the states.

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MPsrch_pp protein protein database search, using Smith-Waterman algorithm

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Cloning of higher plant omega 3 fatty acid desaturases.	#title
Plant Physiol. (1993) 103:467-476	ibni, noi
Pierce, J.; Browse, J.	
Reiter, R.S.; Carlson, T.J.; Susseth, S.H., Feldmann, K.A.;	
Schweiger, B.; Steers, K.E.; Allen, S.M.; Blackwell, M.;	
Perez-Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.R.;	
Yadav, N.S.; Wierzbicki, A.; Argerter, M.; Caster, C.S.;	#authors
JC2335	BEFERENCE
JQ2337	ACCESSIONS
21-Mar-1996	
3Ո-ներ-1993 #sեզաբութ revision 20 Aug 1994 #text_change	57 +3 +3 77
#formal_name Brassica napus #common_name rape	ORGANISM
omega-3 fatty acid desaturase (EC 1.14.99) BN3 - rape	TITLE
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H.M.; Somerville, C.R.
Crience (1997) 258:1353-1355
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2 ×. Ę REFERENCE YALKA 17 7 9 5 G Ş Ž 貨 2 REFERENCE ACCESSIONS WC MYCE RESULT SUMMARY ACCESSIONS Clery March Best Local Similarity 36.6%; Matthes 126; Otherworker #title #authors #accession fcontents #accession #title # Buthers ##molecule_type mRNA ##residues 1-453 ##label YAD ZI HIH SANTRHARROUTE ON THE TOTAL TO THE TOTAL THE TOTAL TO THE TOTAL THE TOTAL TO THE TOTAL THE 269 LITTIGATHE SUPHESSEWINDRIALATVORPESSILARVEHALTSTRVAHIN ESTMOHY 328 183 htmp:/splfrp.jekaav.lts/falaafvgflgfltwqfgwl+11ktyvapylvfvcwld 241 134 midtdeswypv sedkry n dmawyekllrfylph haypiyi firspnr-dys---##cross-references GB:D13780 ##residues 379 HAMEATKAIKELLOETTQEDGIEVVKAMWEGAKEGITVEFDEQG 572 100 CLERGEVERSECCIEMY NYHAVELSETVMLEVQETI WELYLAPMYSGREYMGGERC 209 ##status 21 pftlgelmaipadoføpsvorslgyffldvgliagfyalaa y --i-ds-wff-ypif 73 74 wliggtlfwslfvvyhdogligsfsksktlnnwighlebtpilvpyhgwrishrthhantg 133 30 PETVGELKKAIPPHCEKRSIPRSESYLIWDIIIASCEYYXATTYEPLLPHPLSYFAWPLY 89 Cakamott, M., 178, D.A., Hijisti, C., Widi, H.; Nistida, I.; Olmori, M., Murata, N., 1111 M. I. (1944) (F1)44 (F) Clouring of observable degree of membrane-lipid unsaturation. cDNA:GMD Plant Physiol (1993) 103:467-476 Cloning of higher plant imega-3 fatty acid desaturases Yadav, N.S.; Wierzbicki, A.; Aegertor, M.; Caster, C.S.; French Tru, I.; Sinney, A.T.; Bill, W.E.; Booth Jr., J.R.; Schweiger, B.; Stecca, K.L.; Allen, S.M.; Blackwell, M.; Peiter, R.S.; Carison, T.T.; Pussell, S.H.; Feldmann, K.A.; JQ2335 omega-3 futty acid desaturase (EC 1.14.49.—) GMD — soybean #formul_nume Glyclin= max #nommal_num= soybean 30 Dep 1993 #sequence_revision 20 Acj 1994 #noxt_change JQ2339 JQ2339 #length 359 #molecular-weight 41919 #checksum 9162 S52650 S52649 102339 28-05t-1996 #s-gaende_revision 28 0.+ 1996 #text_change Pierce, J.; Browse, J. 21-Mar-1996 28-0ct-1996 1-359 ##label SAK preliminary #type complete Pred. No. 1.90e-103; 87; Mismar that 198; 1369 31% ; 198 16; Longth 359; Indois 23; Caps

**CICYS ITETETSTES GB:L22965

This engyme introduces the third double bend in the birepothesis of

18:2 and 18:3 fatty seids which are important constituents of

Rougestfamily emoys 2 fatty solid desatutase

#length 453 #molecular weight 51362 #checksum 7549

22.3%; Score 674; DB 5; Length 453;

plant membranes.

oxidoreductase

SUMMARY KEYWORDS

Query Match

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Best Local Similarity

Fred. No. 4.19e

Ş DЬ Ŷ 9 Ş Ъ 7 Вb Ŷ В Ş ×. KEYWORDS ORGANISM SUMMARY CLASSISSALS S. WMEN REFERENCE ACCESSIONS ENTRY Matches 196; Conservative #title #authors *contents When we refer nows ${\tt CB:L2:2963}$ 145 HONTOGLERBEVERKEKGDIEWYGKYHBRUCUTUWITUWITU GWELYLAINVGCHEY 203 ##redidues ##molecule type mRNA 308 lfpqiphyhlvearqaakpvlgdyyr 333 263 VNGLAGITYLOR TH ISLIGHTDOSEWDWERGALATYDRDYGILMKYFHRITDYHVAHH 320 204 DOOFECHEHENAFIRNDEERLOIYISDAGILAVOYGIFEGAAGGGVASMV-CFYGVPLLI 262 321 PESTMEHYHAMEATKAIKPILGEYYQ 346 249 fvmwldfvtylhhhghhqklpwyrgkewsylrgglttvdrdygwiynihhdi-gthvihh 192 key--shfnpysnlfppserkgiaistl-cwatmfslliylstitspllvlklygipywi 248 140 hanhahiekdeswopitek-i--y-k-nidsmtrliittopipitvypiyl isrs opg 191 y Match (22.2%) (2.2% (3.9) (28°) (58°) (59)†† 404; Livel Cimilatity 36 8%, Eted. N., 9,385-49; News (125) (Conservative 81; Mismatches 113) (65°) (21) (658-14) AN AMPLYMACQUIVELPOWNIAHECTHHAESDYQWEDDTVGEFFGSEELVETESWKYSHRSH 144 81 -wliycpiqqtmfwalfvlghdcghgsfsdspllnslvghilhssilvpyhgwrishr+h llq 25 POETPPETVGELKAIPPHOTKRSIPRSESTLIWDIIIASCETTKATITEELLPHPLSTE 84 91 agaay--l-n--nwlvwplywiagytmfwalfvlybdcyhgsfsndprlnsvvghllhss 145 SHENFACTION TAMES TO THE STATE OF THE STATE plant membranes. 18:2 and 18:3 tatty acids which are important constituents . #superfamily emega: 2 fatty acid decitorase FQ0812 omegan) fatty acid desaturase (SC 1.14.39.) RMD - rape #formal name Brassica napus #common name rape OS Aug 1994 #ecquence_revision OS Aug-1994 #fext_change #length 404 #molecular-weight 46617 #checksum 9400 oxidoreductase cDNA: BND Cloning of higher plant omega-3 farty acid desaturases Pierce, J.; Browse, J. Plant Physical (1993) 103:467 476 Yadav, N.S.; Wierzbicki, A.; Aegerter, M.; Caster, C.S.; PQ0812 Perez-Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.R.; Schweiger, B.; Stecoa, K.D.; Allon, S.M.; Blackwell, M.; Beiter, B.S.; Sarlson, T.J.; Blost I, C.B.; Foldmann, K.A.; 1-404 ##label YAD #type complete = -= 74; Mismatches 100; Indels 23; Gaps 17; Diske 670; PB % Longth 404;

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and the third double bonds, respectively, in the biosynthesis of
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I. Riol. Them. (201) [AS.:Show [AS.:A.
A gene encoding a chloroplast omega-3 fatty acid desaturase complements alterations in fatty acid desaturation and chloroplast copy number of the full mutuant of hisbidgain
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                                                                         #length 446 #mulecular weight 51174 #ehecksum 4650
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Matches 125; Conservative

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ACCESSIONS REFERENCE Ş t : Ş 7 7 9 B ÷ 글 12 7 Ы DATE 77.E Ş Addition WEINTER RESULT Query March 8.1%; Score 244; DB 10; Length 447; Best Local Similarity 27.5%; Pred. No. 9.78e 22; Matches 97; "Transcritor 69; Micharthau 176, 163-16 76; Capa Query Match Best Local Similarity 29.0%; . nn Matches #accession #authors # Submission 190 HARMSON COUNTRIBUTATION OF LITTOR CONTINUES (ALGORAL 25) 166 wJa-svi-hqlklhfn: wfategkq-requitsalfviiaga:ajp-vmf:ytlq--vwg 217 | Chief | Table Table Text | Control 177 GETVMLTVQFTLGWPLYLAENVSGEPYDGGERCHFHENAPIYNDRERIQTYISDA-GILA 235 118 COURCE THE HEALT MESWAYCHROHION TOOLERDE PER VERZEGO LEWY DRYHNNAL 176 184 teddie printingery gyepwet/bidgibbiktumbred swiptembeden issepg-1 237 127 wgtvlievtey algif-miakapwyll-plawawtgtairgffvighdoahkefeknkl 183 ##cross references EMBL:X78311 **residues ##molecule_type mRNA 帯帯なす みすこの 277 Hadi nyhyphhlistgipsynlikayasikqmageylye 314 252 MYCTYCYTLLIANGTUVLTTYLGHTHECIP HYDCCEWDWCHCALA TYDROYCILWYF 309 218 vvkfwlmpwlgyhfwmstftlvhhtvpeipfsy-rdkwnealaglsgtvhedypkwvevl 276 58 WELLIAM FYYKALLYFFELFMELSTFAWFLTWADDOTT TOTWVIAHECGHHAFSDYOW 117 74 БЫЛБИРІЗУРАМЫЛУМАСОВЕТІЛІМИГАНЕССИНАРЗВУДЖІЛІВТУС ПІРИSЕЦІУ 132 56 yallaiapwylllpv.wfltgttltgffvighdeghrsfsrknwvnnlvghlaflp-liy 113 13 VCYCLERYAACQCVASMVCEYGAPILLIVNGELVLLTYDDRTHESIDHYHSSFWHWFRGAL 295 gwplijyktgi vgwik-twimpwlgyilgmorifiyhhdighipfkookownaagagl 345 HATTOTHWARRIGIAMSTLAMMATEMENTSSEY VC 346 81; Conservative 66; Mismatches 106; Indols 26; Caps 22; :: 549331 Schmidt, H. 549331 submitted to the EMPI Data Library, March 1994 #formal name Spinacha oloracea #common name spinach 16-Peb 1995 #woquence_revision 12 May 1995 #foot change n 6 fatty acid desuturase 349 331 12 May-1995 1:447 ##label SCH prefiminary :-:: # yre namplete ·-Short 255; DR 16; Pred. No. 1.45e-23; = DB 16; Length 347; spinach

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Ş D Ş Вb Ş Ę, Ş SUMMARY KEYWORDS REFERENCE ACCESSIONS ORGANISM Query Match Best local C Matiches #description #Sipmission *authors 317 183 wtk-feg-k-q-rqqvk-fss llv igiaaa a fptmiltig vwgfvkfwvi 227 287 iphhvttaipwynlrtptpvyrkiggeyly 316 259 PILITVNGFIVITITYIQHTHPSIPHYDSSFWDWFRCALA-TVDRDYGTINKVF-HNITDTH 199 SCHPADGGEBUHLHBMADIAMBELBIGIAISDAUITAKOAUTHAAVOJOMASAKOBAOA 5/8 141 HRSHHSNTGSLERBEVEVERKKSDIRWYCKY H NNELGRIVMLTVQFTLGWPLYLAPNV 198 125 hnghhkytnrmeldnawgpwrkeeygnagkfmgutydlfrgrawwigsilhwa sihtd 182 ##CTO25 - toletetides EMbLinds 55 ##residues ##molecule_type DNA ##status 66 pwfllpvvwvftqtaltqffviqhdcqbrsfsrsvwvndwvghilflpiiy-pfhswriq 194 pwlvfhfwmstftllhhtiadiptrepegwheaesglsgtvhanysrwgeflahdi nuh 286 VAHHPESTMPHYHAMEATKATKPTLOEY-Y 345 h Similarity 23.0%; Prod. Mo. 4 345 20; Fig. Cimilarity 465 Middat No. 106; Nidola M., Eq. #length 351 | #moleculur weight 40928 | #checkoum 6291 Spirulina platensis. SS4253 Biosynthesis of gamma linolenic acid in the cyanobacterium Murata, N.; Deshnium, P., Tusaka, Y. submitted to the EMBL Data Library, April 1995 \$54259 #type complete
Deltal2 desaturabe (EC 1.14.99..)
#formal_name Spirulina platensis
(W-Uni-1945 #kejari - General CO 1 oxidoreductase \$54259 21-Mar-1996 1 351 ##label MUR preliminary ----.. -------· 11 · 12 · 1987 · *** () · 188 · 198 · Spitalina platema ------

ENTRY REFERENCE ORGANISM TITLE ACCESS IONS RESULT #1.1tle # journal #authors *accession ##status 15 Sakamoto, T.; Wada, H.; Nishida, I.; Ohmori, M.; Murata, Plant Mol. Biol. (1994) 24:643-650 Delta-12 desatorises Symothonystis sp. (PCn6714) #formal name Symothocystis sp. #cummon name PCC6714 20 Oct 1994 #sequence revision 20 Oct 1994 #foxt_change \$43770 543770 \$43770 Identification of conserved domains in the Delta-12 20-Oct-1994 desaturases of cyanobacteria. preliminary 1-349 ##label SAK #type complete

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                                        ##note
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41.0%; Pred. No. 3.70e 116;
vative 69; Mismatches 99; Indols 25; Gaps 17;
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ORGANISM DATE ENTRY 8 COMMARK REFERENCE ACCESS IONS Query Match 24.25; Doore 333; DS 16; I Rest Local Similarity 38.88; Pred. No. 3.68e 108; Matches 127; Conservative 78; Mismatches 97; Induls 25; Capa #accession #title #authors 145 BENEGSERBETVEVERSCHOLDEN. BELGGE DIE DVERTEIGHE. ##cross-references DDBJ:D26509 191 eg--s-hinpysslfapserkliatsttowsimlatl.vylsflvdpvtvlkv-ygvpyl 24 20. ##residues ##status 320 191 305 hlfpqiphyhlvdatraakhvlgryyr 331 304 hlfpqiphyhlreatkaakpvlykyyr 330 320-ы ы СТМентиАмьАТКА і Б. Н. Б.Т. 👡 - 346 5 --g s hfr.pysdifqphor k yww.cotlow.umaaillylotafgslqmtkiygapyl 246 ARE LINEAUQUOUNTES ESTEDIES FOR THE FIELD OF THE FIELD TO THE FIELD TO THE FIELD OF ъ. HIFSTMPHYHAMEATKAIKPILGETYQ 346 ifvmwldfvtylhhhgyekklpwyrgkewsylrgglttvdrdyglfnnihhdi-gthvih 303 THE TELEVISION OF THE TELEVISION OF THE THE TELEVISION OF T #length 3/9 #molecular weight 44149 #checksum Cloning of a cDNA encoding tobacco omega 3 fatty acid Hamada, T.; Kodama, H.; Nishimura, M.; Iba, Gene (1994) 147:293-294 desaturase. 14-May-1995 1 379 ##label HaM preliminary #type complete Length 37%; CONTRACABINET IN THE

Dec 17 11:08 /home/fuller/dec97/US-08-572-027A-6.rpr

RESULT ENTRY TITLE :2 ;; 2. 7 Š. :2 \$ 12 REFERENCE ACCESSIONS SUMMARY COMMERT REFERENCE ORCANISM CLACCIFICATION - #superfamily immga 3 fatty acid desatorion Best local Similarity 39.3%; Matches 128; Conservative Querry Match #authors #accession *contents ## 11 No. 14-54-14-13-14 (18:12:2965) Senpise1## C 3 C 3 F 4 374 lfpylphyhlvestesskpytykyyr 404 PINGAGARAMANA, SAVAR, BALLASAMILOMOSTAL PINGHULUMUHAHANA DA 1906 HETITIE EE TEETE TEE 261 pyktyshidpssdlivpssekdo itstacwaamlyllogidtomypiqilkiyyvpyvi 319 191 swplywaight of walterlybersybystsons klusewyblibs salepybywaishrth 210 ##molecule type mRNA B5 AVECTWACQCOVITOVWVIAHACHHAFSDEQWIDDTVCILFHSSILVEVEVEWEYSHRHH 144 TOTAL BEHVARALKATATE TOTAL 046 5 This enzyme introduces the third double bend in the bicsynthesis of 18:2 and 19:3 (arry poids which are important constituents of plant membranes. = :: PQ0812 Yuday, M.S., Wierzbieli, A.; Aegerter, M.; Caster, C.S.; Percz Grab, L.; Kinney, A.J.; Bitz, W.D.; Booth Jr., J.R.; Odhweiget, B.; Otellou, K.L.; Allen, C.M.; Risckwell, M.; Beitet, B.S.; Carlout, C.J.; Bluell, C.B.; Foldmann, K.A.; ر. د د #length 453 #molecular-weight 51362 #checksum JQ2339 cDNA:GMD Plant Physiol. (1993) 103:467-476 Y.Hav, N.S.; Wierzbieki, A.; Amperler, M.; Custon, C.S.; Perez-Grau, I.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.R.; Chweiger, B.; Chrong, M.L.; Aller, S.M.; Blackweil, M.; Reiter, B.S.; Carlson, T.J.; Busseil, G.H.; Feldmann, K.A. JQ2335 05-Aug 1994 #sequence_revision 05-Aug-1994 #text_change omega-3 fatty acid desaturase (EC 1.14.99.-) BND - rape oxidoreduct ase JQ2335 #!ormal name Brassica napus #common name rape Touring of higher plant omega lifely and keatherwood Pierce, J.; Browse, J. 21-Mar-1996 Sep 1993 #sequence_revision 20 Apg-1994 #rext_change 1-453 ##label YAD Mar-1996 23.5%; * y: · . r; lete :: Cooke 71), IRB 5, Whighth 453; Pred. No. 4.440-104; 74; Mismatches 101; Indels 23; Cops

Dec 17 11:08

ENTRY DЬ Ş Ъ Ş 뮍 Ģ DЬ Ş 5 Ş REFERENCE DATE TITLE Ş 30 SUMMARY COMMENT ACCESSIONS ORGANISM **KEIWURDS** CLASSIFICATION Query Match 23.7%; Shore 70%; DR %; Length 404; Best Local Similarity 37.2%; Fred. No. 3.75c 103; Matches 126; Conservative 81; Mismatches 113; Indels 19; Gaps 15; #authors #accession #accession #contents #title ##molecule_type mRNA ##residues 1-380 BUR VEHNITETREMENDEUTMINIHAMENIBALERIERI LIJETTY DAG 190 681 DILEMALECARACIONALECTEMATE SALESARA SALESTES DE ASSESSE SALESTA DE LA CONTRACTA DE LA CONT 317 ihhdi-gthvihhlfpqiphyhlveateaakpvlykyyi 354 250 ASMVCFYCVELLIVMGFLVLITYLQH THES LEHYDSSEWEWLFCALATVOREYSILME 307 200 la-y-ptylwars-pgkkyshyhpdsdlflpheredvilstudwiamavilvoinfymyp 256 146 ilvpyhgwrishrthhqnhqhvendeswhpm- se-kiy-ksldkp-trifritlplvm 199 ##Cross-references OBJUDION ##residues ##molecule_type mRNA TO ATTYPELLEHPLS:#AMELYMAGQO VLTSVMVIAHECOHIAFSD (QMEDETVOLIFESF 129 91 agaay -- 1-n--nwlvwplywiaggtmiwalfvlghdcghgsfsndprlnsvvghllhss 145 10 SPPSKKSETDNIKRVFGETFFFTVGELKKATFFHGFKRSIFRSFSYLIWDITIASGFYYV 69 33 ssppieeephtq:fdpgapppfnladiraaiphh.wvkipwksmsyvvrelaiv--fala 90 WPLYLAFNVSGRFYDGGFACHEHFNAFIYNDRERIQIYISDAGILAVCYGLIRYAAVQOV 249 The omega-6 and omega-3 fatty acid desaturases introduce the second and the third deaths bends, respectively, in the binsymbosic of This enzyme introduces the third should bend in the biosymthesis -plant membranes. 18:2 and 18:3 fatty acids which are important constituents Clonding of higher plant umega 3 fatty acid desaturases. JQ2338 #superfamily emegant fatty anid desaturage 1800d Pierce, J.; Browse, J. Plant Physiol. (1993) 103:467-476 Cloning of higher plant omega-3 fatty acid desaturases. Plant Physical. (1993) 103:467-476 Yadav, N.S.; Wierzbicki, A., Aegerter, M.; Caster, C.S.; Perez-Grau, I.; Kinney, A.I.; Hitz, W.D.; Booth Jr., J.B.; Schweiger, B.; Stecca, K.L.; Allen, S.M.; Blackwell, M.; Reiter, R.S.; Carlson, T.J.; Russell, S.H.; Feldmann, K.A.; omega-3 fatty acid desaturase (EC 1.14.99.-) GM3 - soykean #formal_name Glycine max #common name soykean 36-Sep 1443 #sequence_revision 26-Aug-1444 #rext_change #length 404 #molecular-weight 46617 #wheeksum 9468 asP10nparopryo cDNA:BND 02-Jun-1995 Pierce, J.; Browst, 1-404 ##label YAD 1-380 ##label YAD -:: :: #type complete ... ------::

REFERENCE

A49503

#title # journal #authors

A gene encoding a chloroplast omega lifetty and desaturate complements alterations in fatty and desaturation and chloroplast copy number of the fad/ mutant of Arabidopsis

thaliana.

Iba, K.; Gibson, S.; Nishiuchi, T.; Fuse, T.; Arondel, V.; Hugly, S.; Somervalle, C. J. Brel. Chem. (1993) 268:24090 24105

υb Ş d Ş Дb 4 વા ξ DЬ Ç. 7 REFERENCE ACCESSIONS CROANIOM 7777 ENTRY Advino KEYWORDS Dec 17 11:08 CLASSIFICATION K at 1 direct Query Match #title #accession ##residues ##molecule_type mRNA 321 LESTMPHYHAMEATKAIKPILGEYYQ 346 308 lfpqiphyhlveatqaakpvlgdyyr 333 249 tymwldfytylbhbghbqklpwyrgkewsylrgglttydidygwiynibbdi gtbyibh 307 204 INGEACHEHIMAEIYHBRERIQIYISBACILAVCYGLIRYAAVQOVASMV OFYGVELLI 262 192 keq-s-hfnpysnlfppserkyiaistl-cwatmfslliylsfitspllv/klygipywi 140 hymhyhiekdeswypltek-i--y-knlds-mtrlirftypfplfyypiyl-fsrs--pg 191 145 HOMOCOLEREEVEVEREACCIEMY ESTAMBICARIVALISAÇETI (MET L'ARMISTERY 203 ဏ 25 FORTHETVOELKKALLENGERKSTERSESTUNDTTERSCTTTVATTET LIJTHLIGTE 84 27 psuppptkiaeirasipkhownkopwrslsyvtrdvlviaal- vaaa-iht dnwl--1 80 . 81 -wliycpiggtmfwalfvlghdcyhgsfsdspllnslvghilhssilvpylywrishith 139 α AMPLYWACQCCVLTCYWVIAHECCHHAEEDYZWLDDTVCLIFHSFLLVTYSSWETSHRRH 144 arch 23.2%, Score 701; DB 5; length 380; ;) Clarify 30.6%, Expd. N. 3.16.12; 129; Cuservation 74; Mismarches 100; Itabilo 73; Gaps 19; plant membranes. ------18:2 and 18:3 fatty acids, which are important constituents #superfamily omega 3 fatty acid desaturase JQ2336 Pierce, J.; Browse, J. Plant Physicl. (1993) 103:467-476 Yadav, M.S.; Wierzbicki, A.; Avgerter, M.; Caster, C.S.; Perez-Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.R.; Schweiger, B.; Stessa, K.L.; Allen, S.M.; Blackwell, M.; Peiter, R.S.; Carlson, T.J.; Bussell, S.H.; Feldmann, K.A.; #longth 380 #moloculur-weight 44185 #checksom 1659 oxidoreductase Cloning of higher plant omega? tatty word #formal_name Arabidepsis thaliana # ^ mmon_name meuse-ear emery and faitty articled desertations (EC 1.14.44.7) CFD JQ2335 JQ2336; A49503 30 Sec 1993 #sector of the set is 20 Sec 1994 #eest cress 05 May-1995 Arabidopsis thaliana 1-446 ##label YAD /home/fuller/dec97//US-08-572-027A-6.rpr #type complete

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ENTRY
TITLE
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Qy 259 PILLIVNGFIVLITYIQHTHESIPHYDGSFMIMIRGALA-TVDREYGIINKVE-HUITDTH 316 Bb 287 iphhydtaipwydiytgipyydiyjayly 113

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517 VAHHLESTMEHTHAMEATKALDETLUCET-1 545

ENTRY SUMMARY REFERENCE ORGANISM TITLE ACCESSIONS #submission #authors ##cross-references EMBL:X78311 NY #Weigth 447 #molecular-weight 51143 #checksum 6764 ##molecule_type mRNA **Testdues ##status 14 549331 S49331 submitted to the EMBS Satu Library, March 1994 Schmidt, H. \$49331 #formul_dame_Opinatia_lerists #1.550 n_nare_epinational n-6 fatty acid desaturase 12 May-1995 1 447 ##lubyl SCH preliminary #type complete spinach

Query Match 7.9%; Coure 20%, TB 10; Dough 447; Hest Mould Similarity 27.1%; Ecol. No. 2.446-20; Matches 79; Conservative 70; Mismarches 116; Indels 26; Sups 2

Db 184 vedivytla(mpriy-py-pw:Phobjib)ktoml(-draw)pomk-di---ss--pj-1 277

Qy 118 LDDTVO-LIPHSFELVITECWEYCHERHHOUT CUFFSEVITEKKODIEWEGLYLNNEL 176 Db 228 rka hit yaya gli tiw miribw - leekinkefingeerkranislaardafen 287

QY 236 VCYGLYKYAAVQCVASMVCFYGVYLLIIVNGFLVLITYLQHTHYSLFHYDSSEWDWLHGAL 295

Db 346 sgtvhcdyprwieilchdis vhiphhispkipsynlraangslnenwgey 395

Oy 296 A-TVDRDYGILNKVE-HVITUTHVAHHLESTMEHYHAMEATKAIKPILGEY 344

ENTRY TITLE REFERENCE ORGANISM ACCESSIONS # journal #authors #accession .15 \$43770 Sakamoto, T.; Wada, H.; Nishida, I.; Ohmori, M.; Murata, N. Plant Mel. Plal. (1994) 24:643-650 \$43770 #formal name Synechocystis sp. #hommon name P006714 20-Oct-1994 #sequence_revision 70-65 1994 #hext change Delta-12 desaturases - Symechocystis sp. (PCC6714) Identification of conserved domains in the Delta-12 20-0ct -1994 desaturases of cyanobacteria. #type complete

##status ##residues

preliminary
1-349 ##label SAK

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SUMMARY

#length 349 #molecular-weight 40340 #checksum 5411

Every March 1997 1997 1997 1997 DB 16; Length 349; Best Local Similarity 25.9%; Fred. No. 2.25e-19; Marches 67; Conservative 80; Mismatches 129; Indeks 79; Caps 73; Marches 67; Conservative 80; Mismatches 129; Indeks 79; Caps 73;

pb 30% lab₁slkqnwgpflye 318

Qy 332 FATKAIKPILGEY YQ 346

Search completed: Wed Dec 17 11:08:37 1997 Job time: 55 secs.

277 chdi-nvhvphhlstgipsynlrkayasikqnwqeylye 314

310 -HNITDTHVAHHIFSIMHHEHBAMHAIKAIKAIDGER 🐛 346

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Best Loui Scallarity 27.8%; Sted. No. 6.855 25;
Front Loui Scallarity 27.8%; Sted. No. 6.855 25;
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MPsrch_pp protein - protein database search, using Smith-Waterman algorithm

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Statistics: Mean 46.871; Variance 103.065; scale 0.455

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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N. Assertiably words which are important constitutions of the plant membranes. N. Assertiably where 3 fatty acid desactions constitutions. Litization for the level of weight 42250. Asterboom 2244.	##residues 1-377 ##label YAD ##cross-references GB:122962 This entryme introduces the third double bend in the biosynthesis of	Pierce, J., Browse, J. Plant Physiol. (1993) 103:467-476 Cloning of higher plant emega 3 fatty acid desafurases. clawa::N3 r92337	Yadav, K.S.; Wierzlicki, A.; Augerter, M.; Caster, C.S.; Perez-Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.R.; Schweiger, B.; Stecca, K.L.; Allen, S.M.; Blackwell, M.; Beiter, R.S.; Carison, T.J.; Russell, S.H.; Feldmann, K.A.;	30-366-1993 #Reduction_tovistich_20_Aug_1994 #text_change 21-Mar-1996 JQ2335 JQ2335	JQ2337 #type complete comega-3 fatty acid desaturase (FC 1.14.99) RN3 - rape #formal name Brassica napus #common_name rape

KETWOKES SUMMARY Э ENTRY B 2 В Ş В Ŷ Ś Ş В Ş 9 Ş В CLASSIFICATION REFERENCE ORGANI SM Query Match 26.2%; Score 792; DB 5; Length 377; Rest Local Similarity 39.4%; Field Sc. 4.3%-119; Query Match Matches 135; Conservative #title #authors #accession ##molecule type mRNA
##residues 1-386 304 CAMON LIBERARIAN SWINGHOWN STREET FOR STREET FOR STREET FOR STREET S 170 128 15 284 ifnnihhdi gthvihhlfpqiphyhlvdatksakhvlgryyr 325 245 VOGVASMVCEYGVELLIVNGELVLITYLCH 1885-LEBYDSSEWIWLEGALATVDEDTG ROR 224 lygpytylkyygypyiifymwldaytylhhhyhddklpwyrgkewsylrgglttidrdyg 283 881 62 68 TVATITEPULEMĒLSTEAMELIWAUQUUVLIUNMVIAMEDŪHHAESETQKLIETVSLIEH 127 Match 26.0%; Local Similarity 39.6%; 9 VSSTOKKOSTONIKEV FORTHETVSSLEVALITIBOFRESIFESFOYLIMDITIASCEY 67 2 vvamdqrsnangderfdpsaqpptkiydiraaipkhcwvksplrsmsyvardifavvala 61 mlayplylwyrspqk eg--s-hynpyssiiapserkli-atsttcwsimlatlvylsf 223 -LGWPLYLAFNVSGRPYDGGFACHFHPNAPIYNDRERLQIYISDAGILAVCYGLYRYAA- 245 SFILVPYFSWKYSHRRHHSNTGSIERDEVFVPKKKSDIKWYGKYLNNPLGKTVMLTVQFT 187 sfilvpyhgwrishrthhanhahvendeswypl--pe-kly-knlshs-trmlrytvplp 169 · vaavyt -The omega-6 and omega-3 fatty acid desaturases introduce the second and the third double bends, respectively, in the biosynthesis of plant membranes. 18:2 and 18:3 fatty acids, which are important constituents of JQ2335 #length 386 öxidöreductase #superfamily omega 3 fatty acid desaturase Cloning of higher plant omega-3 tatty acid Pierce, J.; Browse, J. Plant Physical. (1993) 153:467-476 Yadav, N.S.; Wierzbicki, A.; Aegerter, M.; Caster, C.S.; Perez Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Jr., J.B.; Schweiger, B.; Stecca, K.L.; Allen, S.M.; Blackwell, M.; Reiter, R.S.; Carlson, T.J.; Russell, S.H.; Feldmann, K.A.; JQ2335 J\2555 30-Sep-1993 #sequence_revision 20-Aug-1994 #text_change #formal_name Arabidopsis thallana #common_name mouse-var omega-3 fatty acid desaturase (EC 1.14.99.-) CF3 = Conservative 02 Jun 1995 Arabidopsis thaliana ds-wit wplywaagytliwaiivlghdcghgsfsdipllntavghilh 114 1-386 ##label YAD #type complete #molecular weight 44076 #checksum 8044 ------76; Mismatches 106; Indels 24; Gaps Score 787; IB 5; Length 386; Pred. No. 4.25e 118; 74; Mismatches 111; Indels 24; Gaps 18;

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                                          138 hqnhqhvendeswvpl--pe-kly-knlphs-trmlrytvplpmlaypiylwyrspgk-- 190
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Perez Grau, L.; Kinney, A.J.; Hitz, W.D.; Booth Gr., J.R.;
Shiwanger, R.; Sharow, K.J.; Allen, S.M.; Blackwell, M.;
Reiter, R.S.; Carlson, T.J.; Bussell, M.H.; Foldmann, K.A.;
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Plant Physiol. (1993) 103:467-476
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Schweiger, B.; Stocca, K.L.; Allen, S.M.; Blackwell, M.;
Reiter, R.S.; Carlson, T.J.; Bussell, S.H.; Feldmann, K.A.;
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7 닭 Lival Similarity 30,68; 20 TORTH TOTAL AND THE CONTINUES OF THE STATE OF THE STAT 13 atch 23.0%; Shore 645; DB 5; Length 380; rul Similarity 34.6%; Pred. No. 5.08e-101; 1245. 23; 129; Tushiye 73; Minushiye 101; Tushiye 23; psapppikiseitasipkhoweknpwrslsyetrdeleiaal -eaaa-iht dowl--1 80 Gaps 19;

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... FNTRY REFERENCE ACCESSIONS RESULT WILKWOOL # Jul beer s Yadav, N.S.; Wierzbicki, A.; Negerter, M.; Caster, C.S.; JQ2336 The 1993 #statement to the 20 April 1994 #text_change *formal_name Arabidupeis thalians *common_name mouse-ear JQ2335 JQ2336; A49503 mega-3 lutty Julid obsuturase (EC 1.14.99.-) CFD Arabidopsis thaliana 05-May-1995 cress #type complete

generation #title ##residues ##molecule_type mRNA Plant Physical, (1993) 103:467-476 Cloning of higher plant omega-3 latty acid desaturases. TQ2336 Ferez Ctau, L.; Kinney, A.J.; Bitz, W.D.; Booth Jr., J.B.; Schweiger, B.; Schoba, K.L.; Allen, S.M.; Blackwell, M.; Seiter, B.D.; Tarisch, T.J.; Eussell, S.B., Foldmann, K.A.; Pierce, J.; Browse, J. 1-446 ##!abe! YAD

ADNIHABAN #Unite ## 17 T 14 N A gene encoding a chloroplast omega-3 fatty acid desaturase complements alterations in fatty and desaturation and chloroplast copy number of the fad7 mutant of Arabidopsis Arondel, V.; Hugly, S.; Somerville, C. B. 1. 75.5m. (1942) 258-24049-24105 A49503 The, K.; Cibeon, S.; Nishirebi, T.; Paso, T.; Nishimura, M.; thaliana

#-ross-references MillD: 94043239

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                                                             #length 359 #molecular wright 41919 #checksum 9162
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Conservative 81; Mismatches 104; Indels 29; Gaps 22;

Matches 133;

K 당 ACCESSIONS REFERENCE Ş 문 Ş S TITLE Ý. **7**0 골 ζ: ez EF 3. 2 9 ANYWINS W. LANGE vuory Match B. 1 1 12 Semilarity 29,00; Prod. M. 7,036 25; B. 1 1 12 Semilarity 29,00; Prod. M. 7,036 25; M3+ oho: #authors
#journal #accession #title ##residues 100 PYFEMENSARRHAUST GELERBEVE VERZELEETEWY EFFERWEITERTVERTEGWEL 192 114 pfhswrilinbbh;ytnumdednawapft.po!--ydd--spafikavyraingkl-w 165 *****#status 226 EHRIAMEA RAATA, CLIBATT ÇIRIĞT VATAMMERÇIRIĞI EVELEÇEÇEÇE 298 CONTRACTOR CONTRACTOR OF THE C 187 -s-himpy diregeks weltstfalaarogilgiltwgtgwillikiyvapylvivv 238 134 midtodeswypvsnigkynigmawynk i li fylpi iaypiyl-firs--pnrgg 181 193 YLAFNVSGRPYDGGEACHEHPNAPITNDRERL-QITISDAGTIAVTYGLYRYAAVQGVAS 166 will over highlibits—whateging requires alto images afterway by the grows 217 150 SLENDEY F VERAK SDIRWYSKYLKHEISRYVMLEVQFTLSWEIFLAENVSGREYDGG 206 TA REGIPHELSTFAMEDTMACQUOOVLITOVWVIAHEGGHAESDYQWHDDIVG LIEHSELLV 132 56 yallalapwyllipv-wiitgttitgiivighdoghisisiknwennivghlaiip-liy 113 10 phyklrrateaikpilgeyyrysdepiwdaftksywachfv pn qj 342 81; Conservative 68; Mismatches 104; Indels 26; Caps Sakamoto, T.; Wada, H.; Nishida, I.; Ohmori, M.; Murata, Flant M.J. Biol. (1994) 24:643-650 Delta 12 desaturases - Symocheonomis sp. (POC7002) #length 347 #molecular-weight 40655 #checksum \$43770 \$43771 543771 20 Oct 1994 #sequence revision 20 Oct 1994 #Hext_change Identification of conserved domains in the Delta-12 desaturases of cyanobacteria 20-11-t-1444 preliminary 1-347 ##label SAK atoldali. . H. . z

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EUKARYOTA; FABACEAE PLANTA; EMBRYOPHYTA; ANGIOSPERMAE; DICOTYLEDONEAE; FABALES;

SEQUENCE FROM N.A.

TISSUE-EPICOTYL, MEDILME, 96151506. HERPARD E.P., KINNEY A.J., SIECTA B.L., FLANT EMYSIGE. 110:311 319(1996).

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PENCETON: ER (MICROSOMAL) OMECA-6 FAITY ACTO IMPORTANT CONSTITUENTS OF PLANT MEMBRANES, IT IS THOUGHT TO USE CYLOCHHOME, 55 AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS EXPERIFIED TO PHOSPHATIDYLA HOLLING AND, POSSIBLY, OTHER Section of the probabilities of 18:3 FATTY ACIDS,

PAINWAY: POLYUMEATURATED FATTY ACID BIGGINTHESIS

PHOSPHOLIPIDS.

1- DOMAIN: THE HISTIDINE BOX EMMAINS MAY CONTAIN THE ACTIVE SITE AND/ OR BY INVOLUTE IN METAL ION BINDING. SUBCELLULAR LOCATION: EMPOPIASMIC RETICULUM.

1- SIMILARITY: TO OTHER PLANT ER OMEGA-6 FATTY ACID DESATURASES ra04154;

OXIDOREDUCTASE; FAILT ACTO BIOSTNIHESIS; EMB1: 14,301; TRANSMEMBRANE ENDOF LASM

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    -!- SIMILARITY: To wither PLANT BE OMEGA-6 FAITY ACTO DESATURASES

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Local Similarity 69.7%;
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                                                                                            AAGQGVASMVCEYSVELLLIVIDETIVILITELQETEBESLEHTISSSEWDWERGALAIVURUTI - 353
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HISTIDINE BOX 2.
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                                                                                                                                                                                                                                                                                                                                               Query Match 25.7%;
Best Local Similarity 39.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YADAY N.S., WIERZRICKI A., ALGERIER M., CASTER C.S., EFFEZ GRAU L.,
KINNEY A.J., HITZ W.D., BOOTH J.E. JE., SCHWETGER B., STECCA K.L.,
ALGEN J.M., BUJCKWELL M., HELTER B.D., CARLOON T.J., BUDGELL C.H.,
FELDMANN K.A., PIERCE J., BROWSE J.;
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01-NOV-1995 (BEL. 32, LAST SEQUENCE UPDATE)
01 EE5 1996 (BEL. 32, LAST ANNOTATION UPDATE)
0MPDA-3 FATTY ACTO DESATURASE, ENGOPLASMIC RETICIONAM (EC 1.14.99.-)
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-! STUCELLTIAN ISSATION: ENDERLASMIS MAY CONTAIN THE ACTIVE SITE
-!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE
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HISTIDINE BOX 3.
k, 247737FC FF79;
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     EXTRINATION RETICUIDM;
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Ъ S Di 2 Sporty Mut d. (1.45), Best Local Similarity 41.0%; Mar. Large 134; DOMAIN MINNOG SECRETAGE DOMAIN MEMBERGAL TRANSMEM TRANSMEM 141 hgnhghvendeswyplper-v--ykk-lphs-timliytvplpmluyplylcyrspgk--85 AMPLYWACQUARVILLAVWVIAHEGHHAESDIQWIDDIVGLIEHSELLVIIFSWKISHKSH 144 81 heplywaigelfwaifelghdeghgsfsdipllnsvvghilbefilvpyhgwrishrth 140 <u>::</u> == Kh AA; 14 F4 13 F3 14 C 48 F3 31 14 C 14 C 21 304 Section Con-44:35 MK; The Mark Sea 100, 10 bill Crist "F4; DR 7, D Pred. No 3 07e-144; _ _ _ :: POTENTIAL. HISTIDINE BOX 1. HISTIDINE BOX 2. HISTIDINE BOX 3. POTENTIAL. POTENTIAL. CZZBANKU CKC32; Fa -.. = Gaps 17;

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01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANADTATION UPDATE)
0MEGA-3 FATTY ACID DESATURASE, FNDOPLASMIC RETICULUM (EC 1.14.99.-)
                                                                                                                                                                                                                                                                                       FIGARYOTA; FLANTA; EMBRY-FRYTA; ANGLOGFENNAE; DICOTYLEDONEAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                   P48624;
                                                                                                                                                                          ARONDEL V., LEMIEUX B., HWANG I., GIRSON S., GOSSMAN H.M., SOMERVILLE C.R.;
                                                                                                                                                                                                                                                                                                          SRASSICA NAPUS (RAPE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                    FD32_BRANA
                                                                                                                                                         SCIENCE 268:1353 1355(1992).
                                                                                                                                                                                                                MEDLINE; 93088059.
                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                            (VERSION 2).
                                                                                                                                                                                                                                                                      "APPARALES; CRUCIFERAE
                                   !- PATHWAY: POLYUNSATURATED FATTY ACID BIOSYNTHESIS.
                                                                                                                         THE THIRD BOURNER ON IN THE BIOSYNTHESIS OF 18:3 FATTY ACIDS,
DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE
                  SUBSELLUIAF LOCATION ENDOPLASMIC RETICULUM.
                                                                                   IMPORTANT CONSTITUENTS OF ELANT MEMBRANES, IT IS THOUGHT TO NOTH-HOME. BY AS AN ELECTRON FORDER AND TO ACT OF EATTY ACLDS
                                                                    ESTERIFIED TO PHOSPHATIDYLCHOLINE AND, POSSIBLY, OTHER
                                                   PHOSPHOLIPIDS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
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                                                                                                                                             DESATURACE INTRODUCES
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OXIDOREDUCTASE; FAITY ACID KIDSTNTHESIS; ENGAPLASMIC RETIDILING

AND/ OR BE INVOLVED IN METAL TON BINDING.
SIMILARITY: TO OTHER PHANE OMEGA S FATTY ACTO DECASTRACES

-'- SIMILARITY:

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01-PER-1996 (REL. 33, CREATED)

01-DEL-1996 (REL. 33, LAST SEQUENCE UPDATE)

01-ONT-1996 (REL. 34, LAST ANNOTATION UPDATE)

OMEGA-3 FATTY ACID DESATURASE, ENDOPLASMIC RETICULUM
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1 SOMAIN: THE HISTIDINE BOX SOMAINS MAY CONDAIN THE ACTIVE SITE
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HISTIDINE ROX 2.
HISTIDINE ROX 3.
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Pred. No. 5.65c 124;
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P32291;
01-00T-1093 (REL. 27, CREATED)
01-00T-1093 (REL. 27, LAST SEQUENCE UPDATE)
01-FEB-1096 (REL. 33, LAST ANOSTATION UPDATE)
                                                                                                                                                                                                            YAMAMOTO K.T., MORI H., IMASEKI H.;
PLANT CELL PHYSIOL. 33:13-20(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  OMEGA-3 FATTY ACTIVITIES ATTRASE, ENTRY LASMIC RETICULARM (BC 1.14.99.-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EUKARYOTA; PLANTA; EMBRYOPHYTA; ANGLOSPERMAE; DICOTYLEBONEAE; FARALES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHASEOLUS AUREUS (MUNG BEAN) (VIGNA RADIATA).
                                "- FINOTION: MICROSOMAL (EF) OMECA-3 FATTY ACID DESATURASE INTRODUCES
THE THIRD DOUBLESOND IN THE BLOCKHTHESIS OF IRCS FATTY ACID;
IMPORTANT CONSTITUENES OF FLANT MEMBRANES. IT IS THOUGHT TO USE
CYTOCHROME IS AS AN ELECTION THOSE AND TO ACT ON FAITY ACIDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (INDOLE-3-ACETIC ACID INDUCED PROTEIN ARGI).
ESTERIFIED TO PHOSPHATICY! CHOLINE
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AND, POSSIBLY,
    GTHEP
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FAD3.

EUKARYOTA; PLANTA; EMBRIGGATTA, AGGIGGEBEMAE; DIGOTYLEDONEAE;

(FC 1 14.99.-).

NICOTIANA TABACUM (COMMON TOBACCO)

MEDILINE, 95011632. HAMAIA T., KUTAMA H., NISHIMURA M., IBA K., TEME 147:243 294(1994).

STRAIN-CV. SR1; TISSUE=LEAF;

SEQUENCE FROM N.A. SOLANALES; SOLANACEAE.

Dec 17 11:00 /home/fuller/dec97/US-08-572-027A-2.rsp

Best Query Match DOMAIN DOMAIN NIVWOO OXIDOREDUCTASE; FATTY ACID BIOSYNTHESIS; ENDOPLASMIC RETICULUM, EMBL; D26509; C599592; -!- FUNCTION: ER (MICROSOMAL) OMEGA-3 FATTY ACLD DESATURAGE INTRODUCTS -!- SIMILARITY: TO OTHER PLANT OMEGA 3 FATTY ACID DESATURASES. -!- SUBCELLUIAK INCATION: ENDOPLASMIO BELICUIUM. -!- LOMAIN: THE HIGHERIKE BEA CHMENS MAI CONTAIN THE ACTIVE PHOSEHOLIPIUS.
-!- PATHWAY: POLYCHGATURALED FALLE ALLE BLUCHGHESIS. TRANSMEM TRANSMEM TRANSMEM TRANSMEMBRANE. y Match 23.7%; Score 717; PH %; Langth 37%; Local Chilarity 28.7%; Prest 21. 4.1% 199; hes 125; Conservative 82; Mismalchos 9%; Indels 25; Caps AND/ OR BE INVOLVED IN METAL ION BINDING. CYTOCHROME BY AS AN ELECTRON LINNER AND TO ACT ON HATTY ACTOR ESTERIFIED TO PROSCHATIONICHOLINE AND, MOSSIFIY, OTHER THE THIRD DOUBLEBOND IN THE BIOSYNTHESIS OF 18:3 FATTY ACIDS, IMPORTANT CONSTITUENTS OF FLANT MEMBRANES. IT IS THOUGHT TO USE 52 213 236 97 72 255 256 256 101 WALLEY MA HISTIDINE BOX 2.
HISTIDINE BOX 3.
W/ .C.TESK: FIRST POTENTIAL. HISTADINE BOX 1.

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Matches 125; Conservative

01-FEB-1996 (REL. 33, CREATED) 01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE) 01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE) P48619; FD3C_RICCO EUPHORBIALES; EUPHORBIACEAE. EUKARYOTA; PLANTA; EMBRYCHIYTA; ANGLOSINEMAR; DIOCIYLEDONEAL, OMESA-3 FATTY ACTI DESATURASE, CHICHOPLAST PRECUESOR (EC 1.14.99. COMMUNIS (CASTOR BEAN). STANDARD; ERT; 460 AA

RESULT FI AC PA AC PA DT 0.0 D

P48621; FD3C SOYBN

STANDARD;

GLYCINE MAX (SUYBEAN)

EUKARYUTA; FLANTA; EMBRIGEHTTA; ANGTUSFERMAE; DICOTYLEDUNEAE; FADALES;

01-FEB-1996 (REL. 3), CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
0MEGA 3 FATTY AND RESARDENCE, CHICAGRIAGT PERCURSOR

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SEQUENCE FROM N.A

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304 hlfpqiphyhlteatkaakpvlgkyyr 330

320 HPFSTMPHYHAMEATKAIKPILGEYYQ 346

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VAN BY LOO F.J., SOMERVILLE C.;
FLANT PHYSICS. 160:443 444 (1994).

-- FINT PONT CONTROL 160:443 444 (1994).

-- FINT TONE ON A STATE AND DESATURASE INTRODUCES
FIRE TOLEO WORLDWIND IN THE BIOSINTHESIS OF 16.3 AND 18.3 PATTY
A.ICS, MY. GETAN CONTITUENTS OF FLANT MAMBELLICS. IT IS THOUGHT
TO USE FERRE DOWN AS AN ELECTRON DOWN AND TO AND THE ATTY ACIDS
ESTRETELS OF SALASTELLIS, SUBSTITUTES AND THEOSIMILITIALIZEROL.

-- PATHWAY: FOLYUNSALURATED FAITY ACID BIOSINTHESIS.
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' DOMAIN: FOR HISPIPINE FOX DOMAINS MAY CONTAIN THE ACTIVE SITE
389 iphyhlwostosskyyr 410
:|||| :||| + ||::| ||:
325 MPHYHAMEATKAIKFILGEYYQ 346
                                                                                   267 LULITYLQH THPS LEHYDOSSEWDWEBGALATVDRDYCLIAKVEHNITDTHVAHHDEST 324
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Best Local Similarity 38.5%;
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P48618;
               FD3C_BRANA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND/ OR BE INVOLVED IN METAL ION SINGING.
-!- SIMILARITY: TO OTHER FLANT OMEGA 3 FATTY ATTO DESALURANCE

    -!- SUBSCELLIFIAR LOCATION: CHLOROPLAST, MEMBEANE-ROUND (PROBABLE).
    -!- DOMAIN: THE HISTIDIAE BOX SOMAINS MAY SOMBAIN THE ASTIVE SITE

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ESTERIFIED TO GALACTOLIPING, SHLFGLIFIES AND PROSERATIONAGENCHOL.
-!- PATHWAY: POLYUNSATURATED FATTY ACTO BIOSYNTHESIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!= FUNCTION: CHLOROFLASI OMBOA-3 FATIT ACID DESATURASE INTROGUCES
THE THIRD GOURGEWORD IN THE GLOSTSTHESIS OF 16:3 AND 18:3 FATIT
ACIDS, IMPORTANT CONSCIPUINTS OF FLANT MEMBRANES. IT IS THOUGHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLANT PHYSIOL. 103:467-476(1993).
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                                                                                                                         379 lfpqiphyhlveateaakpvfgkyyr 404
                                                                                                                                                               263 VNGFLVLITYLQH-THPS-LPHYDSSEWDWFRGALATVDRDYGILNKVEHNITDTHVAHH 320
                                                                                                                                                                                                                                         204 DOGEROHEHEWARITYMDEERIGDYISIAADDIAAAAADDE YAAAQDAASMAATAADIII 1-260
                                                                                                                                                                                                                                                                          263 ktg--shfdpssdlfvpnerkdv-itstacwaamlgllvglgfvmgpiqllklygvpyvi 319
                                                                                                                                                                                                                                                                                                               145
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                                                                                          321 PFSTMPHYHAMEATKAIKPILGEYYQ 346
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                                                                                                                                                                                                                                                                                                             pyapppfiladiradiphhowwkdpwrsmsyvvrdvi-av-fylasasay--l-n nwl 150
                                                                                                                                                                                                fvmwldlvtyliddighedklpwyrgkewsylrgglttldrdygwinnihhdi-gthvihh 378
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                   STANDARD;
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trod. No. 1.11e-124;
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                                                                                                                                                                                  HISTIDINE BOX 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CHLOROPLAST.
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UMEUN 3 FAITY ACTO DESATURASE,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE THIS COLORGEDATI AMEDA-3 FAITY ACTO DESATIONATE INTROCUCES THE THIS POSTRIEROND IN THE RICCYNTHESIS OF 16.3 AND 18:3 FAITY ACTOR, IMPOGRAMI CARACITICHENS OF FLANT MEMBRANES. IT IS THOUGHT TO USE FEAREDOMIN AS AN ELECTRON COMOR AND TO ACT ON FAITY ACIDS SCITEMENTS. IN ALACTICAL LIC, PILECTRON CANDE TO ACT ON FAITY ACIDS SCITEMENTS. POLICONATURATED FAITY ACID BIOGRAPHESIS.

-I- PATHWAY: POLICONIALTURATED FAITY ACID BIOGRAPHESIS.
-I- COMMENTARE RISTITIONE FOR COMMENSANE BORND (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-FEB-1996 (BEL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
C1-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
OMERA-3 FATTY ACID DESATURASE, CHLOHOPLAST PRECURSOR (EC 1.14.99.-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YAFAY N.S., WIESZRITKI A., MENERIER M., CASTER C.S., ETRIC GRAU L., KIMBER A.J., BIJOWADI, RAWIH J.R. JR., SCHWEIGER B., STECCA K.L., ALJEN S.M., BLACKWELL M., REITER R.S., CARLSON T.J., RUSSELL S.H., FELLMANN K.A., FIERCE J., RROWSE J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FUEARYOTA; FLATTA; EMSPYSHEYTA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T15508=3880;
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                    256 pmgmlklyvipywinvmwldfvtylhhhghedklpwyrgkewsylrgglttldrdyglin 315
249 VASMVCEYGVELLIVNGELVLLTYLQH-THES-LEHYDSSEWDWERGALATVDRDTGTLN
                                                                        log GWELTLAENVSGKEIDGGEKCHEHENAFINNDRERDGITISDAGILAVCIGUERYAAGQG
                                                                                                             201 aypfylwarspgk--kgs---hyhpdsdlflpkerndvltstacwtamavllvclnfvmg
                                                                                                                                                                                           146 ilvpyhgwrishrthhqnhghvendeswhpm--se-kiy-ksidkp-trffrftlplvml 200
                                                                                                                                                       130 LLVPYFOMKYCHPCHICKITCCLEFDEVFVFFFFCDIEWYCFYIANFI.CPTVMITVQFT-L 188
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                                                                                                                                                                                                                                  70 ATTYFELLEHELSYFAWFLYWACQGCVLTGVWVIAHECGHHAFSDIQWLDDTVGLIFHSF 129
                                                                                                                                                                                                                                                                                                                                               33 ssppieeepktqrfdpgapppfnladiraaipkhcwvknpwksmsyvvrelaiv--fala 90
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AND/ OR BE INVOLVED IN METAL ION BINDING.
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Fred. No. 5.53e 124;
81; Mismatches 112;
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HISTIPINE BOX 3.
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Bust Hills 1
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                                                                                                                                                                                                                                                            DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EUKARYOTA; PLANTA; EMBKYOPHYTA; ANGLOSPERMAE; DICOTYLEDONEAE; FABALES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OMEGA-3 FATTY ACID DESATURASE, ENDOPLASMIC RETICULUM (EC 1.14 99.-).
                                                                                                                                                                                                                                                                                            DOMAIN
                                                                                                                                                                                                                                                                                                                                                                    OXIDOREDUCTASE; FAITY ACID BIOSYNTHESIS; EMPOPLASMIC RETICULUM
                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; L22964; G408794; -.
                                                                                                                                                                                                                                                                                                                                                                                                                AND/ OR BE INVOLVED IN METAL ION BINDING.
-!- SIMILARITY: TO OTHER PLANT OMEGA-3 FATTY ACTO DESATURASES
                                                                                                                                                                                                                                                                                                                                                                                                                                               !- SUBCELLULAR LOCATION: ENDOPLASMIC WETICULUM.
-!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE; 9430214/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE=SEED;
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                                                                                                                                                                                                                                                                                                                                       THANSMEM
                                                                                                                                                                                                                                                                                                                                                       TRANSMEMBRANE.
                                                                                                                                                                                                                                                                                                           TRANSMEM
                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- PATHWAY: FOLYUNSATURATED FATTY ACID BIOSYNTHESIS.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CYTOCHROME B5 AS AN ELECTRON DONOR AND TO ACT ON FAITY ACTOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE THIRD DOUBLEBOND IN THE BIGSINIHESIS OF 18:3 FAILY ACTOS, IMPORTANT CONSTITUENTS OF PLANT MEMBRANES, IT IS THOUGHT TO USE
gsapppfkiaeirasipkhowekspwroloyelrdelviaale maihfd mwl | 80
                                                                          -wliycpiggtmfwalfvlghdcyhqsfsdsplfnslvghilhssilvpyhgwnishrth 139
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                                                              AWPLYWACQG:VIJEGWWVIAHECGHHAESGYQWLDDTVGLIEHSELLVEYESWKYSHRSH 144
                                                                                                                                                                                               n 22.5%; score 66%; bb 3; bength 380; Cimilarity 33.6%; resart. 3.4% 174;
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33, LAST SEQUENCE HEDATE)
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1838. E 1 골**잝**뮻뮻뮻용용 K. Вb 77 EMRI, 014007; 0141653; . EMRI, 026019; CA68434; . OXINGRESSONATT; EATTY ASTO RESENTIONSIS; CHIOROFIAST; MEMBRANE; TRANSIT REPTIDE: CHIOROFIAGT (POTENTIAL) ACIDO, IMCORTANT CONCTITUENTO OF FLANT MEMBRANCO. IT IS THOUGHT TO IN FEFFICICIA ACTAN FLITTH WICHTER AND THE ACTAN FATTY ACIDS BETWEEN THE ACTAN FATTY ACIDS BETWEEN THE ACTAN FATTY ACID RESENTATION (PROBABLE). 1. PATHWAY: POLYUNSATURATED FATTY ACID RICSYNHHESIS. 1. SUBSTRIALIA, ICANTON: CHICHOPAPLAST, MEMBRANF HOUND (PROBABLE). 1. TISSUE SPECIFICIT: MOST ABUNDANT HY LEAVES AND SEPELLINGS. 1. THE HICTORY BOY POMALING MAY CONTAIN THE ACTIVE SITE KINNEY A.J., HITZ W.D., BOOTH J.R. JR., SCHWEIGER B., STECCA K.L., ALLEN S.M., BLACKWELL M., BEITER B.G., CARLSON T.J., BUSSELL S.H., FELDMANN K.A., PIPROF J., BROWSE J.; UMBOA- 5 FATTY ACTO DESATURASE, CHIDORDELASI ERBOURGER (EC 1.14.99.-). 01-NOV-1995 (RFL. 32, LAST SEQUENCE HEDATE) 01-FEB-1996 (RFL. 33, LAST ANNOTATION UPDATE) P46310; FD3C ARATH EMBL; L22961; C408481; -. CHANTISE (BAY 1993) TO EMPLY PERMANETERS OF LAST AND 18:3 FATTY THE THIRD DOUBLEBOND IN THE BIOSYNTHESIS OF LAST AND 18:3 FATTY WATAHIKI M., YAMAMOTO K.; STRAIN : CV. COLUMBIA; TISSUE=AERIAL PARTS; PLANT PHYSIOL. STRAIN OV. EUKARYOTA; PLANTA; EMBRYOFHYTA; ANGLOSPERMAE; DICOTYLEDONEAE; ARABILOPSIS THALIANA (MOUSE EAR CRESS). 01-NOV-1995 (REL. 32, CREATED) STRAIN-CV. COLUMBIA; TISSUE=HYPOCOTYL; SEQUENCE FROM N.A. HUGLY S., SOMERVILLE C.; MEDLINE; 94043239. SEQUENCE FROM N.A. YAGAV M.S., WEFPSBISE A., AFGFFFFF M., CASTER C.S., FEREZ-GRAU L., MEDLINE; 94302147. CHINROPLAST. !BA K., SEÇHENCE FROM N.A. CAPPARALES; 249 tww.ldfvtylhbhghbgklgwyrgbowsylngg!ttvdrdygwryorbidi-gthvihh 192 kg - shiq perlippersymiati writefalliylati apilalklygipywi 248 321 PESTMEHYHAMPATKATKETLOEYYQ 346 308 ltpqiphyhlveatgaakpvlgdyyr 333 263 Whot by Lilliagh 204 COLVA MERIONI POT REPOZITETOTA TOLAVO TOTEGRAVO. BIOL. AND/ OR BE INVOLVED IN METAL ION BINDING. SIMILARITY: TO OTHER FLANT OMEGA 3 FATTY ACTO DESATURASES CIRCON S., NISHINCHI T., FUSE T., NISHIMURA M., ARONDEL V., CHEM. 268:24099 24105(1993) COLUMBIA; TISSUE=HTPOCOTTU, CRUCTEERAE. 103:467-476(1993). STANDARD; THE PROPERTY OF THE PROPERTY O PRT; 446 AA THICKNEY AND THE . 5 307

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Best Matches 126; Conservative Query Mutch y Match 22.43; Stire ET; SE 3; Daryth 445; Local Similarity 37.7%; Fred. No. 4.68e-123; 77; Milmatches 109; Indels 22; Cabs

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P48620; 01-FEB-1996 (KEL. FD3C_SESIN STANDARD; 33, CREATED) PRT: 447 AA

01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE) 01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE) OMEGA-3 FATTY ACID DESATURASE, CHEOROPLAST PRECURSOR (FG 1 14

SESAMUM INDICUM (ORIENTAL SESAME) (GINGELLY).

CUKARYOTA; PLANTA; EMBRYOPHYTA; SCROPHULAKIALES; PEDALIACEAE. ANGIOSPERMAE; DICUTYLEDONEAE;

SEQUENCE FROM N.A.

STRAIN=CV. 4294; TISSUE CUTYLEDON;

SHOJI K.;

-!- FUNCTION: CHIOKOPLAST OMEGA-3 FATTY ACID DESATURAGE INTRODUCES THE THIRD DOUBLEBOND IN THE BIOGRAPHIESIS OF 16:3 AND 18:3 FATTY ACIDS, IMPORTANT CONSTITUENTS OF FLANT MEMBRANES, IT IS THOUGHT TO USE FERRELAAIN AS AN ELECTRON BROKE AND TO ACT ON FATTY ACIDS SUBMITTED (APR-1995) TO EMBLICHNEAUKING DATA BANKS

MEMBRANE-BUIND (PRUBABLE).

ESTERIFIED TO GALACTOLIFIES, SULFOLIFIES AND PHOSPHATIDIDGLICEROL

-!- PATHWAY: POLYUNSATURATED FATTY ALID BIOSTNIHESIS. -!- SUBCELDILAR LOCATION: CHOGOPLAST, MEMBRANE-ROUND (PROFAX -!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE

EMBL; 025817; 0870784; -. Ribeall CTASE; EALT ACC !~ SIMILARITY: AND/ OR BE INVOLVED IN MEIAL FOR BENDING. SEAST ACTS RESATURASES

where the terms of

THEORIE LACT, MEMBEANE

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DOMA IN CHAIN N. VALA NI WOO TRANSIT TRANSIT PERTIDE. Tonas, 230 370 44" 44; 374 WM STILLS 171 363 HISTIDINE BOX 3. HISTIDINE BOX 1. CHLOROPLAST. OMEGA 3 FAITY ACID DESATURASE, CHLOROPLAST (POTENTIAL) 1345-1346A TE 32

Query Mutch 22.0%; Best Local Similarity 37.5%; Matches 123; Conservative Score 665; DB 3; Dred. No. 4.79e-120; Tray Mismathathas 94) Long. 147, "marks 7"; Caps 17;

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FD3D ARATH STANDARD; PRT;

P48622;

01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
TEMPERATURE-CHACTURE OMEGA 3 FACTY ACTS DECATERACE,

CHLOROPLAST

PRECURSOR (EC 1.14.99.).

CAPPARALES; CHUCIFERAE

EUKAKTOTA; PLANTA; EMBRYGPHYTA; ANGLOSPERMAE; SICOTYLEBONEAE,

ARABIDOPSIS THALIANA (MOUSE EAR CRESS).

SEQUENCE FROM N.A.

STRAIN-CV. Amssil friedwirms AFRIAL PARTS

MEDLINE; 95148742 SOMERVILLE C.;

SIRSHES, ARREDEL V., IBA K., SOME PLANT PHYSIOL. 106:1615 1621(1994).

SEQUENCE FROM N.A.

STRAIN-CV. COIDMBIA, TIGGOR-BER-SCIFI,
WARKHEI M.C., YAMANGTO K.T.,
SUBMITTIO (SEE 1993) TO EMBLYGRIBANK/COBG DATA BANKS.
SUBMITTION (SEE 1993) TO EMBLYGRIBANK/COBG DATA BANKS.
TO BENT TOWN OF 1993) TO EMBLYGRIBANK/COBG DATA BANKS.
THE INCHES COMMENT OF THE STRAIN AND 16.3 AND 16.3 FATTY
ATTEC, IMPROVED AND IN THE KNOWN OF PLANT VENDER WOLLD IN 19 THOUGHT

9 D. Б Ş 96 S 25 Š Ş Query Match Best Local S Matches 127; Conservative EMBL; L27158; G516045; -. EMBL; U08216; G497219; -. EMBL; D17578; G471093; ... DOMAIN -!- INDUCTION: BY LOW TEMPERATURES.
-!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE AND/ OR BE INVOLVED IN METAL DOM BINDING.
-!- SIMILARITY: TO OTHER PLANT OMEGA 3 FATTY ACTO SESATURASES. DOMAIN DOMA IN OXIDOREDUCTASE; FATTY ACID BIDSYNTHESIS; CHLOROPLAST; MEMBRANE; CHAIN TRANSIT PEPTIDE. -!- SUBCELLULAR LOCATION: CHIOROPLAST, MEMBRANE BOUND (PROBABLE). TRANSIT ESTERIFIED TO GALACIOLIFIDS, SOLFOLIFIDS AND EMOSPHATIDITISTYCEFOL.
-!- PATHWAY: POLYUNSATURATUR FATTY ACID BIOSYNTHESIS. 296 klygipywifvmwldfvtylhhloghodklpwyrgkowsylngglttldrdygwinnihhd 355 194 LAFNYSGREYDUGFRCHEHPNAFIYNDRERLQIYISDAGILAVCYGLEBYAAGQGVASMV 253 y Match 21.7%; Local Similarity 37.9%; 16 SEIDTIKRVPCETPPETVCELKKA/PPHOPKBKIPK-SESYHJWDIIIASCEYYXATTYF 74 75 PLLPHPLSYFAWPLYWACQSCVDTGVWVIAHE GHHAFSDYQWDDTVGLIFHSELLVFY 134 74 seedterfdpgapppfnladiraaipkhowyk, pwmsmsyvyidvaivfgla-avaayf 131 TO USE FERREDOXIN AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS 156 192 359 435 AA; 435 160 196 363 50136 MW; Score 655; DB 3; Length 435; Fred. No. 9.84e-118; 74; Mismutches 111; Indels 23; Gaps TEMPERATURE SENSITIVE OMEGA-3 FATTY ACID DESATURASE, CHLOROPIAST. HISTIDINE BOX 1. HISTIDINE BOX 3. HISTIDINE BOX 2. 7061 SFED CRC32; (POTENTIAL).

Search completed: Wed Dec 17 11:01:36 1997 Job time: 55 secs.

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Release 2.10 John F. Collins, Ricomputing Research Cair. Copyright (1) 1993, 1994, 1994 Chicarally : Edudough, Colo Distribution rights by Intelligements, Inc.

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Rum on: Wed Dec 17 [1:04:00 [407; MasPar rime 0.07 Seconds 817.019 Million cell updates/sec

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Section 1997

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Post-processing: Minimum Match 0% Listing first 45 summaries

Database: swiss-prot34 lipart1 2:part2 3:part3 4:part4 5:part5 6:part6 3:part7 8:part8 9:part4 10:part10 11:part11

Statistics: Mean 48.284, Variance 83.615; scale 0.577

Pred. No. is the number of results pendicted by change to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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ALI GNMENTS

PRESENTED STANDARD; PRT; 383 AA. P46313; P46313; P46313; P14945 (BEL. 32, CREATED) P1-ROV-19945 (BEL. 32, LAST SEQUENCE UPDATE) P1-ROV-19945 (BEL. 33, LAST SEQUENCE RETURNIAM (BC 1.14.99) P1-ROV-19945 (BEL. 33, LAST SEQUENCE) P1-ROV-19945 (BELLIANA (MOUSE-EAR CRESS). P1-ROV-19941 (BELLIANA (MOUSE-EAR CRESS)) P1-ROV-19941 (BELLIANA (MOUSE-EAR AND TO ACT CREST (BELLIANA (MOUSE-EAR AND TO ACT CRESS (BELIANA (MOUSE-EAR AND TO ACT CRE	3.0	:: :	3 =	3	:		3	÷;	₹:	<u>.</u>	>	ÆΧ	23	\mathbb{R}	00	8	20	\mathfrak{L}	Ŧ.	7.7 7.3	I	Ξ,	7	$\stackrel{A}{\smallfrown}$	-:;	RE
STANDARD; PRT; 383 AA. REL. 32, CREATED) REL. 33, LAST SEQUENCE UPDATE) ACID DECATURASE, EXPORTIAGMIC RETICULUM (EC 1.14.9) ANTRA EMBRYOPHYTA; ANGIOSPERMAE; DICOTYLEDONEAE; MOLIFERAE. N.A. 6997. N.A. 6997. N.A. 6997. N.A. 6997. N.A. 6997. PR. MINISTERMAN K., YADAV N., LAHK F., BROWSE J. 1077-158(1594). PR. MINISTERMAN J. OMEGA-6 FART: ACID DESATURANE INDI- 108-108-108-108-108-108-108-108-108-108-	TEATLWIS 1-	TO SALE OF THE SAL	- PATHWAY!	PHOSPHOLI	313143123	MONTH STATE	TNATGOR	# 1987 W.	-1 - FU 0.1 [o.N •	PLANT CHILL 6:	OKULEY J., LI	MEDLINE; 9417	SEQUENCE FROM	[1]	CAPPARALES; C	EUKARYOTA; PL	ARABIDOPSIS T	FAD2.	(DFLTA-12 DES	OMEGA-6 FATTY	01 FEB-1496 (61-80V-1995 (01-NOV-1995 (P46313;	FIRE ASATH	RESULT 1
PRT; 383 AA. DIPROSE UPDATE) MOTATION HEPATE) MOTATION HEPATE) MOTATION HEPATE) AN GRESS). AN ANGIOSPERMAE; DICOTYLEDONEAE; AN K., YADAV N., LARK F., RROWSE J. AN K., YADAV N., LARK F., RROWSE J. AN EAST MEMBALAS SOF 18:5 FAITY ACHIENCE AND TO ACT ON FAITY ACHIENCAM ISAUS AND TO ACT ON FAITY ACHIENCAMINE AND TO ACT ON FAITY ACHIENCAMINE MAY SOMTAIN THE ACTIVE SIZAL ON MAINS MAY SOMTAIN THE ACTIVE SIZAL ON MAINS MAY SOMTAIN THE ACTIVE SIZAL ON BINCHOL.	C. TO OTHER IN ME	A HISTORY MAY	VO TOOMETON. CHO	IDS.	ACT IMEGICAN OF A	NE AS AN ELECT	SU SINGLILISMO		FR (MITHOSOMAL)	[47-]5×(]444).	WILLIAM ''' MANITH	6997.	N.A.		RUCIFERAE.	ANTA; EMBRYOPHYT	HALIANA (MOUSE-E		ATURASE).	ACID DESATURASE	REL. 33, LAST AN	HEL. 39, IACT SE	RFL. 32, CREATED		STANDARD;	
AA. AAE; DICOTYLEDONEAE; WHAE; DICOTYLEDONEAE; I'N., LARK F., RROWSE J. I'N., POSSIBLY, OTHER WASSING IN FAITY ACTOR I'N., POSSIBLY, OTHER WASSYNTHESIS GEOGRAM THE ACTIVE SIT LONG.	TAL ION BINE	homains ma	FALLY AFTER E		DER SKI LOBELT	FOR FORCE A	BENZH LINTLE	THE MISSING	OMEGA-6 FA		AN K., YADAV					A; ANGIOSPER	AR CRESS).			, EMPORTAGM	NOTATION HPI	QUENCE UPDA	_			
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MEDLINE; 96151506.
HEPPARD E.P., KINNEY A.J., STECCA K.L., PLANT PHYSIOL. 110:311-319(1996).
                                                                                                                                            OMEGA-6 FATTY ACID DESATURASE, ENDOPLASMIC RETICULIM ISOZYME
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                                                                                          EUKARYOTA;
                                                                                                         GLYCINE MAX (SOTBEAN).
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                                                                                                                                                                                                                                                                                                                                     mitvqfvlgwplylafnvsgrpydg fachffpnapiyndrerlqiylsdagilavofgl 239
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                                                                                                                                                                                                                                                                    KECIYVEPDRQGEKKGVFWYNNKL 384
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                                                                                           PLANTA;
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                                                                                                                                                                                                               STANDAKD;
                                                                                          EMBRYOPHYTA; ANGIOSPERMAE; DICOTYLEDONEAE; FABALES;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            89.4%;
88.5%;
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Pred. No. 0.00e+00;
23; Mismatches 20;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HISTIDINE BOX 3.
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               MIAO G.H.;
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DOMAIN
                                                                 DOMAIN
                                                                                                                                                                        OXIDOREDUCTASE; FATTY ACID RIGSYNTHESIS; ENDOPLASMIC RETICULUM;
                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                    -!- FUNCTION: ER (MICROSOMAL) OMEGA-6 FATTY ACTO DESATURASE INTRODUCES
THE SEPOND HOUSEHOUSE IN THE BIOGRITHERIES OF 1813 FATTY ACTOS,
IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THOUGHT TO USE
CYTOCHROMS AS AS AN ELECTRON CONSERVANCES ACT ON EATTY ACTOS
                           SEMERATE
                                                      DOMAIN
                                                                                                                                                                                                    -!- SIMILARITY: TO OTHER FLANT BY OMESA-6 FATTY ACTO DESATURASES.
                                                                                                                                                                                                                                -'- SUBCELLULAR LOWATION: ENDOELASMIC RETICULIM.
-'- DOMAIN: THE HISTIDINE BOX COMAINS MAY CONTAIN THE ACTIVE SITE
                                                                               TRANSMEM
                                                                                            TRANSMEM
                                                                                                                                                               TRANSMEMBRANE.
                                                                                                                                                                                                                                                              -!- PATHWAY: POLYUNSATURATED FATTY ACID BIOSYNTHESIS.
                                                                                                          TRAVISMEM
                                                                                                                                     TRANSMEM
                                                                                                                         TRANSMEM
                                                                                                                                                    PRANSMEM
                                                                                                                                                                                                                    AND/ OR BE INVOLVED IN METAL ION BINDING.
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                                                                                                                                                                                                                                                                                       ESTERIFIED TO PHOSPHATIDYLCHOLINE AND, POSSIBLY, OTHER
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                           Sho MA;
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85
117
179
225
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249
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141
                                                                  81
105
137
199
245
269
109
                           45167 MW;
                                      HISTIDINE BOX 1.
HISTIDINE BOX 2.
HISTIDINE BOX 3.
Secre 2305;
                                                                               POTENTIAL
                                                                                            POTENTIAL.
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                           CA165721
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                                                    Query Match 76.2%;
Best Local Similarity 77.1%;
! mgrggrtdvppanrksevdplkrvpfekpqfslsqikkaipphcfqrsvlrsfsyvvydl 60
                                    296; Conservative
                                    41; Mismatches 46;
                                                       Pred. No. 0.00e+00;
                                                                       IB 3; Light 383;
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                                        (laps
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360	359

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                            360 reciyvepdqsteskgvfwynnkl 383
  361 KECIYVEPPRQGEKKGVFWYNNKL
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                                                  RESULT
                    01-FEB-1996 (REL. 33, CREATED)
                               P48630;
                                        FD61
 01-0CT-1996
           01-FEB-1996
                                        SOYBN
(REL. 33, LAST SEQUENCE HPDATE)
(REL. 34, LAST ANNOTATION UPDATE)
                                        STANDARD;
                                        PRT;
                                          387
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                                                                                                                                                                             RESULT
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01-NOV-1995 (REL. 37, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION IPPATE)
                                                                                                                                                                P46311;
                                                                                                                                                                       FD31_BRANA
                                                                                                                                                                                              364 TYVEFORQOEKKGVEWYNNK 383
                                                                                                                                                                                                    SU4 LINKVEHNITUTHVAHHFFSTMFHTHAMEATKAIKFILGETTQFDGTFVVKAMWREAKEC
                                                                                                                                                                       STANDARD;
                                                                                                                                                                       PRT;
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EUKARYOTA; FLANTA; EMBRYOFETTA; ANGIOSFERMAE; DICOTTLEDONEAE,

BRACGICA NAPES (BAFE)

OMBOW- 3 PATTY ACTO DESATORAGE,

ENGRY LASMIT BETT-TILTM (ET 1.14.99.-)

(VERSION 1).

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A. 25. 23.35.
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KINNEY A.J., HITZ W.E., BROTH J.R. JR., SCHWEIGER R., STECCA K.L.,
ALLEM S.M., H.A. WHELL M., PETCER R.S., CARLESS T.Y., ROCCTH. S.H.,
FELDMANN K.A., PIECCE J., BROWSE J.,
                      DOMAIN
                                           N.I. VWOG
                                                               DOMAIN
                                                                                                                                                                                 . SIMILARITY: TO OTHER FLANT OMESA 3 FACTY ACTS DESATURACES. FMRS, L2246.7 (24.9442) \pm .
                                                                                                                                                                                                                                                                     -!- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM.
                                                                                                                                                                                                                                                                                                                                                                                                                                PLANT PHYSIOL. 103:467-476(1993).
                                                                                TRANSMEM
                                                                                                                                                                                                                                                -'- GOMAIN: THE HISTIPINE FOR DOMAINS MAY CONTAIN THE ACTIVE SITE
                                                                                                                                                                                                                                                                                       -!- PATHWAY: FJINUNGATURATED FATTY ACID BIGSYMTHESIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIINE; 94302147.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAPPARALES; CRUCIFERAE.
                                                                                                     TRANSMEM
                                                                                                                                                              OXIDOSEDHOTASE; FATTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                          TRANSMEM
                                                                                                                                           TRANSMEMBRANE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'ISSUE=SEED;
                                                                                                                                                                                                                                                                                                                                                                                                             1- FUNCTION: ER (MICROSOMAL) OMEGA-3 FATTY ACTO DESATURASE INTRODUCES
                                                                                                                                                                                                                                                                                                                             THE THIRD DOUBLEBOND IN THE RIGSYNTHESIS OF 18:3 FAITY ACIDS, IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THOUGHT TO USE CYTOCHSOME B5 AS AN ELECTRON CONCE AND TO ACT ON FAITY ACIDS ESTEED TO PROSPHATIFOLD WOLLDE AND, POSSIBLY, OTHER
                                                                                                                                                                                                                           AND/ OR BE INVOLVED IN METAL ION BINDING.
                                                                                                                                                                                                                                                                                                            PHOSPHOLIPIDS.
54
203
233
47
128
1295
                      73
226
251
132
132
 4 7 1 × 55
                                                                                                                                                                  ACID RIDSYNTHESIS;
                     HISTIDINE BOX 1.
HISTIDINE BOX 2.
HISTIDINE BOX 3.
                                                                                  POTENTIAL
                                                                                                     POTENTIAL
 ENDOPLASMIC RETICULUM;
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Best Local S
Mutches 13
                                                                                         115 sfilvpyhgwrishrthhqnhghvendeswvpl--pe-kly-knlshs-trmlrytvplp 169
                                                                                                                                                                                                                                                   68 YAATIMELI SE SE TITTE AND LYMA YESPYLTONWATANET SHIARET WONGT TYST EPH 127
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                                                                                                                                                                                                                                                                                                                                                                                                                      -vaavyf----ds-wff-wplywaaggtlfwaifvlghdcghgsfsdipllntavghilh 114
133; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       5imilarity 38.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      January 165; DB 3; Den
Pred. No. 1.54e-144;
78; Mismatches 107;
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188 - LGWPLYLAFNVSGREYSGUERCHEHDNAUTYNDREBLQTYTSDA GITAVCYGLERYA 244

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P48623; FD3E ARATH 01 FEB-1996 STANDARD; ∪ktAï£iJ) PHT; 386 AA.

01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-GCT-1996 (REL. 34, LAST ANNOTATION UPDATE) (KEL

OMEGA-3 FATTY ACTIO DESATURASE, ENGODIASMOS RETUGICIM (FC 1.14.99) ARABIDOPSIS THALIANA (MOUSE-EAR CRESS).

EUKARYOTA; PLANTA; EMBRYUPHYTA; ANGIOSFERMAE; DICUTYLFHONFAF;

CAPPARALES; CRUCIFERAE

STRAIN=CV. COLUMBIA; TISSUE SEEDLING; SEQUENCE FROM N.A.

YMEANY M.O., WIENDBICKLA., ALCHEMEN, ALCHEMENCER B., STECCA K.L., KINNEY A.J., HITZ W.D., BOOTH J.R. JR., SCHWEIGER B., STECCA K.L., MEDLINE; 94302147.

ALLEN S.M., BLACKWELL M., REITER R.S., CARLSON T.J., RUSSELL S.D. EELDMANN K.A., PIERCE J., BROWSE J.;

FLANT PHYSIOL. 103:467-476(1993).

STRAIN=CV. SEQUENCE FROM N.A. COLUMBIA; TISSUE-HYPOCUTYL;

WATAHIKI M.C., YAMAMOTO K.T.;

SUBMITTED (SEP-1993) TO EMBL/GENBANK/HDB/ DATA BANKS

SEQUENCE FROM N.A.

MEDLINE; 94345020. STRAIN-CV. COLUMBIA;

NISHIUCHI T., NISHIMURA M., ARONDEL V., IBA K.;

PLANT PHYSIOL. 105:767-768(1994). FUNCTION: MICKOSOMAL (ER) OMESA-3 FAITY ACID DESATURASE INTROTROFES THE THIRD DOUBLEBOND IN THE BIOSYNTHESIS OF 18-13 FAITY ACID, IMPORTANT CONSTITUENTS OF PLANT MEMBRANES, IT IS THOUGHT TO USE

ESTERIFIED TO PHOSPHAllibylo Hobble AND, POSSIEDY, WIRE CYTOCHROME 85 AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS

PHOSPHOLIPIDS.

!- PAIHWAY: POLTUNSATURATED FAIT ACTD BIOSYNTHESIS

!- IISSUE SPECIFICITY: ABUNDANT IN LEAVES AND SEEDLINGS. BARELY DETECTABLE IN ROUT TISSUE. !- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM.

!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE

AND/ OR BE INVOLVED IN MEIAL FOR BINDING.

-!- SIMILARITY: TO OTHER PLANT CMESA-3 FAFTE ACTO DESATGRASES.

EMBL; D26508; Gli9//95; -. EMBL; D17579; G471091; -. EMBL; L22931; G408483; .

OXIDOREDUCTASE; FATTY AND BINSTATHESIS; ENDOFIASMIC RETICULAM,

TRANSMEMBRANE.

Dec 17 11:04 /home/fuller/dec97/US-08-572-027A-4.rsp

2344444 Sept the Best Local Similarity 40.7%; AMENGES. DOMAIN DOMAIN NIVACC MANSAEM TRANSMEM MEMSINGE [33] Conservation 60; Mismar the 101; 786 M. 63 226 212 1191 117 117 240 262 105 141 3前8 4400 MW; HISTIDINE BOX 2. HISTIDINE BOX 3. W; ~228488~ CPC32; State 750; 28 % 1 Pred, No. 2,32e 143; HISTIDINE BOX 1. POTENTIAL POTENTIAL. POTENTIAL. Cape 16;

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Ş. 말 85 AM EMMACQUEVETONWIADECUBBAECETQMECTVULFFACETUVETTETMAYCBROB 144 lwplywawqytHwaifylghdegligsfsdiplinsvvghilhstilvpyhgwrishrth 140

문 141 hqmhqhvendeswwplper-v--ykklphst--rmlrytvplpmlsyplylcyrspgk--=

Ş 145 HENTOSLERDEVEVEKEKSDIKWYOKYHNNELGETVMLTVQFT-LIGHELILAFNVSGFFY

Ş 2 194 egs DCCFRCHFHBNAFIYNDRURLQIYISDA GILAVCYGLFRYAAQQGVASMVCFYCVPLL htnpyssliapserkliatsttewsimivslialstvtqp-lavlkv-ygvpyi 248 :: ::

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긎 RAS hifpqiphyhlvdatkaakhvigryyr 334

Ş HPFSTMPHYHAMEATKAIKFILGEYYQ 346

FD32 P48624; BRANA STANDARD; FRT; 383 AA.

01 FEB 1996 (REL. 3), CREATED)
01 FEB-1996 (REL. 3), LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 3), LAST ANNOTATION HUDATE)
0MEGA-3 FATTY ACID DESATURACE, ENTREPLACMIC RETICULUM (EC 1.14.99.)

FAD 3 (VERSION 2).

BRASSICA NAFUS (RAPE).

FURARIOTA; FLANTA; EMBRIGHETTA; ANGIOGPERMAE; DICOTYLEDONEAE;

CAPPARALES; CRUCIFERAE.

SEQUENCE FROM N.A.

ARCHDEL V., LEMIEDX B., BWARD I., GIRDON S., GOODMAN H.M., SOMERVILLE C.R.; MEDLINE; 93088059.

SCIENCE 258:1353 1355(1992). ! FUNCTION: ER (MICHIGOMAE) OMEGA 3 FATTE A TO DECATURASE INTROCUCES THE THIRD DOUBLEBOND IN THE BIOSYNTHESIS OF 18:3 FATTY ACIDS, IMPOSITANT CONSTITUENTS OF FLANT MEMBRANES. IT IS THOUGHT TO MISE

IMPORTANT JONSTITUENTS OF FLANT MEMBRANES. IT IS THOUGHT TO STRUCTUREMED BY AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS ESTERIFIED TO PHOSEMATIDYLCHOLINE AND, TOSSIBLY, OTHER

FAIHWAY: FOLYUNSATURATED FATTY ACID BLOSYNTHESIS.

PHOSPHOLIPIDS.

SUBCELLULAR LOCATION: EMPOPLASMIC RETICULUM.

DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE

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Best Local S
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01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-OCT-1996 (REL. 34, LAST ANOTATION UPDATE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOLANALES; SOLANACEAE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EUKARYOTA; PLANTA; EMBRYOPHYTA; ANGIOSPERMAE; bicoffileboneae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NICOTIANA TABACUM (COMMON TORACCO)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OMECA-3 FATTY ACID DESATURASE, EMPOPLASMIC RETICULIM (EC 1.14.44
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                                                                                                                                                                                                                      GENE 147:293-294(1994).
                                                                                                                                                                                                                                                                   HAMADA
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                                                                                                                                                                                                                                                                                                                                                     STRAIN=CV. SR1; TISSUE=LEAF;
                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
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                                -!- FUNCTION: ER (MICROSOMAL) OMESA-3 FATTY ACTO DESATURASE INTRODUCES
THE THIRD DEGELERAD IN THE BIGGINTHESIS OF 18:3 FATTY ACTO,
IMPURTANT CONSTITUENTS OF FLAME MEMBRANES. IT IS TROUGHT TO USE
CYTOCHROME B5 AS AN ELECTRON GROWN AND TO ACT ON FAIT ACTOS
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-!- SIMILARITY: TO OTHER FLAWT OMEGA-3 FATTY ACH! GEGATHRASES
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Local Similarity 39.4%; Pred. No. 3.9%e-159;
Hos 109; Taberto P.D. "C) Microstyle (TO) Tabels C);
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HISTIDINE BOX 3.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATT IN
ANDOREDICAL
TRANSMEMBRANE.
**VALUE NO. 12
**VEM. 212
**VEM. 224
47
                                                            SEQUENCE FROM N.A.
TISCHE HYDCOTYL;
YAMAMOTO K.T., MORI H., IMASEKI H.;
FUANT CHIL FRIGILL 33:13 20(1992).
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01-0CT 1994 (PEL. 27, LAST SEQUENCE HPDATE)
01-FEB-1946 (FEL. 3, LAST ANDARTION HERATE)
0MECA-3 FARTY ACTO GENATURASE, ENDOPLASMIT PRITICIHIM (EC. 1.14.94.-)
(INDULE-3-ACECTIC ACTO INDUCED PROTEIN ARGI).
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!- SIMILARITY: TO OTHER PLANT OMEGA-3 FATTY ACID DESATURASES.
EMRL; 224509; 6540402; ...
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FUNCTION: MICROSOMAL (EL) OMEGA-3 FAILL ACLD DESARDERAGE INTRODUCED
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                                                                                                                  01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEGREDUE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
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EMBL; D14410; GZ8706Z; .
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-!- SUBCELULAR LOCATION: ENGOPIASMIC RETICUISM.
-!- DOMAIN: THE HISTIDINE BOX SEMAINS WAY CONTAIN THE ACTIVE
                                                                  RICINUS COMMUNIS (CASTOR BEAN).
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GLYCINE MAX (SOYBEAN).

EUKARYOTA; PLANTA; EMBRYOPHYTA; ANGTOSPFFMAE; DICOTYLEDONFAE; FABALES;

01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1996 (FEL. 33, LAST ANNOTATION UPDATE)
04-8-1996 (FEL. 33, LAST ANNOTATION UPDATE)

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Best Local Similarity 37.9%;
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-!- ACHIMMAT. ACLIGABATED FAITY ACTOR HOSPITED (FORTITY)
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-!- COMAIN: THE RISTICINE POLICEMAINS MAY CONTAIN THE ACTIVE
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-!- SIMILARITY: TO OTHER PLANT OMEGA-3 FATTY ACID DESATURASES
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                  267 LVLLTYLQH-THES-LEHYDSSEWDWFRGALATVEREYGILNKVFHNITDTHVAHHPFST 324
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 MPHYHAMEATKAIKPILGEYYQ 346
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384 HISTIDINE BOX 3.
52561 MW; DB3DA689 CRC32;
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Pred. No. 4.89c 129;
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Best Local S
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P48625;
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KINNEY A.J., HITZ W.D., BOOTH J.R. JR., SCHWEINER B., STECCA K.L.,
ALLEN S.M., BLACKWELL M., REITEK R.S., CARLSON T.J., RUSSELL S.H.,
FELDMANN K.A., PIERCE J., BROWSE J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
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-!- DOMAIN: THE HISTIDINE BOX DAMAINS MAY CONTAIN THE ACTIVE SITE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR; JQ2339; JQ2339.
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THE THIRD DOUBLEMOND IN THE KIDSTATTHESTS OF 16:3 AND 18:3 FATTY
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UMAGA J (AIT) AGIG DESATURAGE,
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Best Local Similarity 38.7%
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01-0CT-1996 (REL. 34, LAST ANNOTATION UPDATE)
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' SIMPLARTITY: TO STHEW PLANT LIMPUA-3 FATTY ACID DESATURAGES
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        263 VMCFLVLITYLQH TH PSLEHYDSSEWDWFRGALATVDEDYGILMKVFHAITDTHVAHH
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Fred. No. 1130e-122;
"4, Mismartine 100; Tolets 23;
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                                                                                                                                                                                                                        Best Local Similarity
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N1-FEB-1996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND/ OR RE INVOLVED IN METAL TON RINDING.
-!- SIMILARITY: TO OTHER PLANT OMEGA-3 FATTY ACID DESATURASES.
EMBL; 122453; G4U843U; ALT_INIT.
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EUKARYOTA; PLANTA; EMBRYOPHYTA; ANGIOSPERMAE; DICOTYLEDONEAE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION OPDATE)
                                                                                                                                                                                                                                                                         SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- SUBCELLUIAR LOCATION: CHECKOFILE:, MEMAKANE-5-CR. (FROKAKLE).
-!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE STRE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE; 94302147.
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-!- SUBCELLULAR LOCATION: CHILGOFIAII, MEMBHANE-BOOK, (FRORABLE)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -'- FUNCTION: CHLOROPLAST OMBOA-3 FATOY ACID DESATORASE INTRODUCES
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                   321 PFSTMPHYHAMEATKAIKPILGEYYQ 346
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                                                                                                                                      SEPORMSETDTINGAPHOETHOUTTVOELERGALEHOFFROIFIGESYLLWILLIAGOFYLM
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   LLVETE SWKTSHRSHHSNTGSLERDEVE VEKKKSDIKWYGKTHWYF LGRTVMLTVQET-L
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                                                                                      81; Mismatches 113; Indels 21; Caps
                                                                                                                                                                                                                                                                                         HISTIDINE BOX 3.
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OMEGA-3 FATTY ACID DESA
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OXIDOREDUCTASE; FAITY ACID BIOSYNIHESIS; CHLOROFIAST; MEMBRANE; TRANSIT PEPTIDE.

1 CHLOROFIAST (POTENTIAL).
                                                                                                         EMBL; 014007; 0541653;
EMBL; 026019; 0468434;
                                                                                                                                                                                                                                                                                                PRIMARY: POLYUNGATURATED FAITY AGD BIOSTRIVETS:
- CHREMAY: POLYUNGATURATED FAITY AGD BIOSTRIVESIS.
- CHRESLUIAN FORATION: CHISPOPIAST, MEMBRARE POTUN (PROBABLE).
- (- LISSUE SPECIFICITY: MOST ABBURANT IN LEAVES AND SEEDLINGS.
- (- LISSUE SPECIFICITY: MOST ABBURANT IN LEAVES AND SEEDLINGS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBMITTED (NOV-1993) TO EMBL/GENBANK/DDBJ DATA BANKS.

! FUNCTION: CHOSOPIAST OMEGA-3 FATTY ACTD DESATURASE INTRODUCES
THE THIRD DOUBLEBOND IN THE RISSINTHESTS OF 16:3 AND 18:3 FATTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YAMAY N.S., WIERGEIDEL A., ARDRINIE M., WITER SIT, FEEED GRAU L., KIRDEL A.I., HITZ WIR., BAGTH J.E. DE., SCHWEIDER B., STECCA K.L., ALHEN S.M., BLACEWELL M., EETTEL B.G., CARLOON T.J., BUCGELL S.H., FRIJMANN K.A., PIERCE J., BROWSE J.,
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01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
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                                                                                                                                                                                       EMBL; 1,2244); 0404481; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
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                                                                                                                                                                                                                          -'- SIMILARITY: TO OTHER PLANT OMECA-3 FATTY ACID DESATURASES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STFAIN-CV. COLUMBIA; TISSUE-AERIAL PARTS;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TEALW CV. CELIMSIA, TIDITE HYPOTOTYL,
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GIBSON S., ARONDEL
WATAHIKI M.C., YAMAMOTO K.T.;
SUBM.LIED (SEE 1993) TO FMBL/GEHBANK/DUBU DATA BANKO.

1 FURCTION: CHLOROFLAST OMEGA-3 FATTY ACID DESATURASK INTRODUCES
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                                                                                                                                                ARCKEEL V.,
                                                                                                                                                                              COLUMBIA; TISSUE-AERIAL PARTS,
                                                                                                                                    106-1615 1621(1994).
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Search completed: Wed Dec 17 11:04:40 1997 Job time : 31 secs.

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Title: TO US 570 907A (Description: (1-384) trus HD98670997A,pc; Perfoct Score: 3027

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Post-processing: Minimum Match 0%

Listing first 45 summaries

Database: swiss-prot34
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Statistics: Mean 48,189; Vactor's Biosis, Scale of 61

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Bost Local Similarity 77.9%;
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TO THE STATE STATEMENT IN THE STANDARD TO A TAKEN ATTS,
IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THORIGHT TO HSE
CYTOCHHOME BS AS AN ELECTION DUMOR AND TO ACT ON FATTY ACIDS
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OXIDOREIGOTASE; FATTY ACTO PICSYNTHESIS; EMBGELASMIC RETICULUM;
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-!- TISSUE SEECHICITH: STEENBLY EXPRESSED IN SEVELSPING SEEEC.
-!- SIMILARITY: TO OTHER PLANT ER OMEDA-6 FATTY ACID DESATURASES.
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THE SECOND DOUBLEWORD IN THE BLOCKSTHESIS SE 18:3 FATTY ACTO,
IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THOUGHT TO USE
CYTOCHPOME BY AS AN ELECTRON DOBOR AND TO ACT ON FATTY ACTOR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GLYCINE MAX (SOYBEAN).
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KINNEY A.J., HIZZ W.E., BOWEN J.R. JR., SCHWEISER B., STECCA K.L.,
ALLEN S M., BLASEWELL M., REITER R.S., CARLSON T.T., RUSSELL S.H.,
FELDMANN K.A., PIERCE J., BROWSE J.;
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01-NOV-1995 (BEL. 32, LAST SEQUENCE UPDATE)
01-EFR-1996 (BEL. 33, LAST ANNOTATION OFDATE)
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' SIMILARITY: TO OTHER PLANT OMEGA ? FATTY ACID DESACTIBASES.
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CYTECHHOUME 65 AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS
ESTERATELED TO HEACERATHYLOCULUME AND, FRESTRIY, OTHER
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377 AA; 43258 MW; 247237EN 78732;
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              HISTIDINE BOX 1.
HISTIDINE BOX 2.
HISTIDINE BOX 3.
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79; Minor the 100; Indel: 24;
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128 SELLVPYESWKYSHKRIHISNI'GSLERDEVEVPKKKSDIKWYGKYLNNPLGRI'VMLI'VQET 187

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246 VQCVASMVCEYCVPILLIVACELVILTYIQH THES IFHYDCSEWEWIJACALATVIAAVA 263 188 -LIMPLYLAENVSGREYINGGEACHEHENAETYNDEERLQTYTSDAGTLAVCYGLYKYAA- 245

01-FEB-1996 (BEL. 33, CHEATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE DEDATE)
01-007-1996 (REL. 34, LAST AMMOTATION USTATE)

OMEDA-3 FATTY ACID DESATURASE, ENUMPLASMIC RETICULUM (EC 1.14.99.-).

P48623; FD3E ARATH

STANDARD;

PRT;

386 AA.

EURARYOTA; FLANTA; EMBRYOFHYTA; ADDIOGFFRYAE; DIFOTYLEDONEAE;

ARABIDOPSIS THALIANA (MOUSE-EAR CRESS).

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SEQUENCE FROM N.A. MEDILINE, 43084054. ARONDEL V., LEMIEUX B., HWANG I., GIBSON S., GOODMAN H.M., SCHENCE 758:1355-1355(1992). -! EUNCTION: ER (MICROSOMAL) OMEGA-3 FATTY ACTE RESATURACE THE THIRD GOUBLEROND IN THE BIOSINTHESIS OF 18:3 FATTY) IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THOUGHT CYTUCHKOME B5 AS AN ELECTRON DONGE AND TO ACT ON FATTY) ESTERLIFLED TO PHOSPHATIDYLCHOLINE AND, FOSSIBLY, OTHER PHOSPHOLIPIDS. -! PATHWAY: FOLYUNSATURATED FATTY ACID BIOSINTHESIS. -! DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE -!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE	PRT; 383 AA. P48674; 01-FEB-1996 (REL. 33, CREATED) 01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE) 01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE) 01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE) 01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE) 04-FAB-104 (REL. 33, LAST ANNOTATION UPDATE) 05-FAB-105-FAB-115-FAB-	243 m 290 c 301 ll		68 ala iasey 2 : : : 65 CEYYVATTYE 121 : bsfilepy 1: : 125 :EUSPLLVPY	Surry March Best Local Si Matches 137 S 8 rtnvn S 8 rtnvn G 6 NMQVS	TRANSMEM TRANSMEM TRANSMEM TRANSMEM DOMAIN DOMAIN DOMAIN SEQUEBES
ENCE FROM N.A. THEY, 43084054, DELL V., LEMIEUX DELL V., LEMIEUX PUILLE C.R.; RVILLE C.R.; RVILLE C.R.; N.W. 25821755-13 ER (M.THE THIFD DOUBLI IMPORTANT CONST C.TOUCHROME B5 AK ESTEKHIFED TO MPHOSPHOLIFIDS. PATHWAY: POLYUNG SHEGELLULAH LOUDGEMAIN: THE HIST	STANI 6 (REL. 3: 6 (REL. 3: 6 (REL. 3: 7TY ACID: 7) 1 PLANTA; 1 1 CRUCIFE:	OVASMVOE PO METERALITU NEVERNITU	ayplyloyn : gwelylaen gplavikoy	aavy v : : ATTYEPLLP! : : : : : :	26.3%; al Similarity 39.6%; 137; Currentwotter rtnyngdphagdrkkeerfdpsa	63 220 242 101 137 137 304 486 AA;
ENCE FROM N.A. INE; 43088054, DELL V., LEMIEUX B., HWANG I., RVILLE C.R., RVILLE C.R., RIFETON: ER (MICROSOMAL) OMEG THE THIRD GOUBLERAND IN IN THE BI IMPORTANT CONSTITUENTS OF PLAN CYTUCHROME B5 AS AN ELECTRON D ESTEKLE LU TO PHOSPHATIDYLCHOL PHOSPHOLIPUS. PATHWAY: POLYUNSATURATED FATTY SHREELLULAR LUCATION: EXTREPLAS SOMAIN: THE HISTIDINE FOX DOMA	DARD; CREATED LAST SF, LAST SF, LAST AN FSATURASE EMBETOF HTT PARE.	THVAHHLEST	Elemiayplylsyrspgkssogs 	d swilwpl	26.2%, S 39.6%, E tvativ kkeerfdpsac Gurkky FCE1	83 240 262 105 141 308 4407 MW;
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SON S., GOODM EATTY ACID F NTHESIS OF 18 EMBRANES. IT R AND, FOSSIBL AND, FOSSIBL ID BIGSYNTHES RETICULUM. MAY CONTAIN	AS AA. DATE) SMIC MATICULIAN FERMAD, DICCTY	-THPS-EPH Eksakhvlgz 	Capecrik TNORERIGE Oglident pwy	waitvlghds :: :: : !cVWVLAHEO vplper.v VEREKSDIEW	DR 3, 13 3.13e-148; 3.15e-148; 10e-s 119; rebes 119; re	BOX 1. HOX 2. BOX 3.
GOODMAN H.M., ANTE RESATURAD OF 18:3 FATTY S. IT IS THOUGH O ACT ON FATTY OSSIBLY, OTHER YNTHESIS. LUM.	THEM (EST 1.1	134 	atsttows:::::::::::::::::::::::::::::::::	ghgstadipii : CHHAESOYQWII ykk-lphs-tm ::	longth 386	
H.M., ATURACE INTRODUCE FATTY ACIDS, THOUGHT TO USE FATTY ACIES OTHER	1.14.99) EAE;				iava ::35	
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CTBANN CY. CEL, TICOUE-HEAF;
MEDILNE; 9501632.
HAMADA T., KODAMA H., NISHIMURA M., IBA K.;
CENE 147:243-244(1994).
                                                                                                                                                          61 FFR-1996 (REL. 3), LAST SEQUENCE UPDATE)
91 OCT 1996 (REL. 3), LAST ARMOTATION UPPATE)
OMEGA-3 FATTY ACID DESATURASE, ENDOPLASMIC RETICHIUM (RC 1.14.99.-).
                                                                                                                                            FAD3.
                                                                                                                                NICOTIANA TABACUM (COMMON TOBACCO)
                                                                                                                                                                                                                                          FD3E TOBAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; 014410; 0207562;
                                                             SEQUENCE FROM N.A.
                                                                                                SOLANA LES; SOLANACEAE.
                                                                                                              EUKARYOTA; PLANTA; EMBRYOFHYTA; ANGIGSPERMAE; DICOTYLEDONEAE;
                                                                                                                                                                                                        01 FEB-1996 (REL. 33, CREATED)
                                                                                                                                                                                                                         P48626;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WAIDUNGDUCTAGE; FATTY ACTU BINDTHYTHEGIG; ENDOPLASMIC PETICULUM;
                                                                                                                                                                                                                                                                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ! SUBCELLULAR LUCATION: FATOFIASMIC RETICULUM.
! DUMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE
                                                                                                                                                                                                                                                                                                                                                                       264
                                                                                                                                                                                                                                                                                                                                                                                                 247 vmwldfvtylhhhgythklpwyrggewsylrgglttvdrdygwinnvhhdi gthvihhl
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                                                                                                                                                                                                                                                                                                                                    306 fpqiphyhlveatksaksviqkyyr 330
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AND/ OR BE INVOLVED IN METAL ION BINDING. INDUCTION: BY AUXIN, ETHYLENE AND WOUNDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (4) $2m23 stilly
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                                                                                                                                                                                                                                                                                                                                                                                                                                       COPACHEHIMARIYNDRERIQIYISDAGILAVOTGIYRYAAVQ OVASWOOFYOVPULIV 263
                                                                                                                                                                                                                                                                                                         SIMPRIBAMEATEAIRFILIEFTC 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ykegshinpysnlispgerkgv-vistlowgivlsvllylslingpilmlklygvpylii 246
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                                                                                                                                                                                                                                                                                                                       108
238
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47
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231
256
101
137
304
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                                                                                                                                                                                                                                                                                                                                                                                      NOTENTIAL HISTIDINE BOX 1 HISTIDINE BOX 2. HISTIDINE BOX 3.
                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          POTENTIAL.
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                                                                                                                                                                                                                                          374 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 380;
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Ol-FER-1996 (REL. 3, CREATED)
Ol-FER-1996 (REL. 3, LAST SEQUENCE UPDATE)
Ol-FER-1994 (REL. 3, LAST ANNOTATION UPDATE)
OMBGA-3 FATTY ACID DESATURASE, CHLOROFIAST PRECURSOR (EC 1.14.99.-).

EUENETOTA; FLAMITA; EMBRIGHHYTA,

ANTHOOFERMAE, DITTOYLETTARE, FARALES;

GLYCINE MAX (SOYBEAN)

RESULT

0

STANDARD;

PRT;

453 AA

FD3C_SOYBN F48621;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                M. takes
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PLANT PHYSIOL. 105:443-444(1994).
** PERVITON: CHIOPOPLAST OMPLASS FAILT ACTIONS ALUMASS INTRODUCES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIAMOG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -!- SIMILARITY: TO OTHER PLANT OMEGA-3 FATTY ACID DESATURASES. EMBL; 525897; G414732; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ESTERIFIED TO GALACTORIPHIC, SHIEDLIFIES AND FROSTRATICYNGHYCEROL.

--- PATHWAY: POLYNNSATHRAIFD FARTY ACID BIOGYNTHESIS.

--- CHECFULULAR LOCATION: CHIOROFILAST, MEMBRANE BOUNG (PROBABLE).

--- PAARN: THE HISTIGINE BOY BOWAINS MAY COMPANY THE ACTIVE SITE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TRANSIT PEPTIDE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         OXIDOREDUCTASE; FATTY ACID BIOSTATHESIS; CHLOROPLAST; MEMBRANE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDILINE; 94302177.
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                                                                                                                                                     221
                                  390 phyhlvea:eaakpvmgkyyi 410
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326 PHYHAMFATKAIKPILGEYYQ 346
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            149 GSTERDEVEVEVEKKSDIKWYGKYLNNELGETVMLTVQFTLGWPI-FLAFNVSGRPTDGGFA 208
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                                                                                                                                                                                                                                      dfvtylhhlighedklpwyrgkawsylrgglttldrdygwinnillidi gthvihhlfpqi 389
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  460 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HISTIDINE BOX 2. HISTIDINE BOX 3.
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P486ie;
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-!- PARHWAY: POLYCHOACTEL FATTI ALLE REGUNDER.
-!- SUBCELLULAR LOCATION: CHLOROPLAST, MEMBRANE-BOUND.
-!- DOMAIN: THE RISTIDINE BOX HOMAINS MAY CONTAIN THE ACTIVE SITE AND, OR BE LIVOLVED IN METAL FOR REGULD.
-!- SIMILARITY: TO OTHER PLANT OMEGA-3 FAITY ACLD DESATURASES.
                 FD3C BRANA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SUMBINGS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DUMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OXIDOREDUCIASE; FACIT ACID BIOGRATHEDIS; CHICROPIAST; MEMBRABE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; 122365; 6406792; .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLANT PHYSIOL. 103:467-476(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         YADAY N.S., WIERZBICKI A., AEGERTER M., CASTER C.S., PEREZ-GRAU L.,
KINNEY A.J., HITZ W.D., BOOTH J.R. JR., SCHWFIGER R., STECTA K.I.,
ALLEN S.M., BLACKWELL M., REITER R.S., CARLSON T.J., RUSSELL S.H.,
FELDMAAN K.A., PIERCE J., BROWSE J.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TRANSIT PEPTIDE.
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                                                                                                                                                                                                                                                                                             321 LESTMPHYHAMEATKAIKPILGEYYÇ 346
                                                                                                                     379 lfpqiphyhlveateaakpvfgkyyr 404
                                                                                                                                                     263 VNGFLVLITYLQH-THPS LPHYDSSEWDWLKGALATVURDYGILNKVFHNITDTHVAHH 320
                                                                                                                                                                                                                            204 DGGFACHPHPNAPIYNDRERIQIYISDAGIIAVGYGLYR YAAVQGVASMVGFYGVPLLI 262
                                                                                                                                                                                                                                                            261
                                                                                                                                                                                                                                                                                                                                                                                320 fvmwldlvtylhhhghedklpwyrgkewsylrgglttldrdygwinnihhdi-gthvihh 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Let Cal
                                                                                                                                                                                                                                                                                                                                                                                                                                 85 AWELYWACGGLVLFGVWVIAHELGERAEILLEGWELLTVGLIERGELLVFTFFCWEXSHPPRI 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FUNCTION: CHIJBOPIAST OMBJA-3 FAITY ACID DESATURASE INTROJUCES
THE THIRD DOUBLEBOND IN THE BUJGWITHESTS OF 16:3 AND 18:3 FATTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACIDS, IMPORTANT CONCTITUENTS OF FLANT MEMBRANES. IT IS THOUGHT TO USE PERRECOXIN AS AN ELECTRON COMOR AND TO ACT OF FATTY ACTOR
                                                                                                                                                                                                                                                         pgktgshfdpssdlfvpnerkdv-itstacwaamlgllvglgfvmgpiqllklygvpyvi 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      h 23.5%; Score 711, DB 3; Le Camillacity 39.3%; Eyed. No. 2.76-129;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2017
2017
2017
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OMEGA 3 HATTY ACID DESATURASE,
CHIGROPIAST.
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-(- DYMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE AND/ OR BE INVOLVED IN METAL ION BINDING.
-(- SIMILARITY: TO OTHER FLANT OMEGA-3 FATTY ACID DESATURASES.
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KINNEY A.J., HITZ W.D., BOOTH J.R. JR., SCHWEIGER B., STECCA K.L.,
ALLEN S.M., BLACKWELL M., REITER R.S., CARLSON T.J., RUSSELL S.H.,
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TRANSIT PEPTIDE.
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                                EMBL, 12746]; G40848]; -.
EMBL, D14007, G441853, -.
EMBL, D26019; G468434; -.
GAINSETHETIARE, FATTY ACTO BYGENTHERIS, CHLARGYLAGT, MEMBRANE;
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01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
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1 FEBRUTURE CHICAGO LACO CARGA S FATTY ACID DECARDERSE INTRODUCES
                                                                                                                                                                                                                                                                                                               WATAHIRI M., YAMAMOTO K.;
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18A K., 71803432.,
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                                                                                      364 gthvihhlfpqiphyhlvoatesakpvlgkyyr 296
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Local Similarity 38.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17 ETENTER POSTEPETS GLIAGATA AGGINGT STEETING STEETSTEET S
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Prod. No. 1.91e 127;
The Massaches 129; Indeks 26; Taps
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HISTIDINE BOX 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CHLOROPLAST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OMEGA-3 FATTY ACID DESATURASE,
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01-FEB-1996 (REL. 3), CREATED)
01-FEB-1996 (REL. 3), LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 3), LAST ANNOTATION UPDATE)
                                                                                                -!- FUNCTION: CHICAGFIASI OMEGA-3 FAIIT ACID DESATURASE INIROPOLES
THE THIRD DOUBLEBOND IN THE BLOSTNIHESIS OF FAR AND 18:3 FAIIT
ACIDS, IMPORTANT CONSTITUENTS OF BRHANES. IT IS THOUGHT
TO USE FERREL-CAIN AS AN ELECTRON LONGE AND TO ACT ON ENTRY ACIDS
ESTERNIFIED TO GALACTOLIFIES, SHIFFULFIES AND PHOSPHATICHIGHTCEROL.
-!- PATHWAY: FOLYUNGATURATER FATTY ACID BROSTNTHESIS.
                                                                                                                                                                                                                                                                                                          EUKARYOTA; PLANTA; EMBRYGPHYTA; ANGIOSPERMAF; DICOTYLEDONEAE
                                                                                                                                                                                                                                                                                                                                                                                                                                P48620;
                                                                                                                                                                                                      SUBMITTED (APR 1995) TO EMBLIGHMENTED BY DATA BANKS
                                                                                                                                                                                                                        SHOJI K.;
                                                                                                                                                                                                                                        SIRAIN=CV. 4294; TISSUE=COTILEDON;
                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                          SCROPHULARIALES; PEDALIACEAE
                                                                                                                                                                                                                                                                                                                          SESAMUM INDICUM (GRIENIAL SESAME) (GINGELLY).
                                                                                                                                                                                                                                                                                                                                                            OMEGA-3 FATTY ACTO
                                                                                                                                                                                                                                                                                                                                                                                                                                                FD3C_SESIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                            CHIMESTRACT PRECURSER (EC 1.14.39. ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                 447 AA
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OXIDOREDUCTASE; FATTY ACID BIOSYNTHESIS; ('HIOKOPLASI; MEMBRANE, AND/ OF BE INVOLVED IN METAL ION BINDING. '!- SIMILARITY: TO CLHER PLANT -MEDA-3 FAITY ACTO DESAFUHACES, EMBL; 0.25817; 0.840 ± 0.44 ; -

-!- SURCELLULAR LAWATION: CHLOROPLAST, MEMBRANE-ROUND (PROBABLE).
 -!- DOMAIN: THE HISTIGINE BOX DOMAINS MAY CONTAIN THE ACTIVE SLIE.

Dec 17 11:07 TRANSIT PEPTIDE. /home/fuller/dec97/US-08-572-027A-6.rsp

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       321 LESTMPHYHAMEATKAIKPILGEYYQ 346

    (i) Lorad Devigitating to Big age photographic to dynamic methods by bounds 174.
    (i) Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller | Hiller |
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25 OCCUPATIVALEMATERICI PROGRESSION LIMITETE STATEMENT SET 84
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CCCERREREREREREROCOS OFFER
SHANIMON HAMANOTO K.T.,
SHANIMON, COLUMBIA, TISSUE-RIFUCCOTIL;
WATAHEL M.C., TAMANOTO K.T.,
WATAHEL M.C., TAMANOTO K.T.,
SHANITTE (SP-1401) TO FMRL/SERVANIK/DDBJ DATA BANKS.
LUCCIONI GELDROLLAGI OMEGA 3 FATTY ACID ECONTURAGE INTRODUCES
ING. INFO. DOUBLAGADO IN THE BINJUNTHESIS OF 16/3 AND 18/3 FATTY
ING. INFO. DOUBLAGADO IN THE BINJUNTHESIS OF 16/3 AND 18/3 TAUTY
ING. INFO. DOUBLAGADO IN THE BINJUNTHESIS OF FEATT MEMBRANES. IT IS THOUGHT
                                                                                                                                                                                                                                                                                                                                                                                  01 FFF 1906 (RFL. 33, CREATED)
O1 FEB 1906 (REL. 33, IAST ANNOTATION UPDATE)
LAWFBATURE SEMSITIVE CMEDA-3 FAITT WOLD DESATURAGE, CHILAGOLIST
                                                                                                                                                                                                      MEDLINE; 95148742.
                                                                                                                                                                                                                                                                                                                                                                   PRECURSOR (EC 1 14.99.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P48622;
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                                                                                                                          SHOURNCE PROM N.A.
                                                                                                                                                                PLANT PHYSIOL. 106:1615-1621(1994).
                                                                                                                                                                                 CIBSON S., ARONDEL V., IBA K., SOMERVILLE C.;
                                                                                                                                                                                                                                              SEQUENCE PROM N A.
                                                                                                                                                                                                                                                                                                      EUKARYOTA; PIANTA; EMBRYOPHYTA; ANGIOSPERMAH; DICOTYLEBONHAE;
                                                                                                                                                                                                                                                                                                                           ARABILOPSIS THALIANA (MOUSE-EAR CRESS).
                                                                                                                                                                                                                                                                                 CAFFARALES, CRUCIFERAE.
                                                                                                                                                                                                                     COLEMBIA; TISSUE MERIAL PARTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        435 AA
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S 8 Ş 문 Ş d d Ϋ́ g Ş d Query Match 22.5%; Best Local Similarity 39.1%; Matches 131; Conservative DOMAIN EMBL; L27158; G516045; -. -!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE AND/ OR BE INVOLVED IN METAL ION BINDING.
-!- SIMILARITY: TO OTHER PLANT OMEGA 3 FATTY ACID DESATURASES. SEQUENCE DOMAIN DOMAIN CHAIN TRANSIT PEPTIDE. OXIDOREDUCTASE; FATTY ACID BIOSYNTHESIS; CHIGROPLAST; MEMBRANE; EMBL; D17578; G471093; EMBL; U08216; G497219; -!- PATHWAY: FOLYUNSATURATED FATTY ACID BIOSYNTHESIS. 254 CENCETATION OF THE THESE THREST THREST THREST THREAT THREATHER SILVER THREAT THREA 296 klygipywriumwidiutylhhhghedklpwyrgkewsylrgglttldrdygwinnihld 355 194 LAENVSCREYDUGEACHEHENAFIYNDRERUQIYISDACILAVOYOURTAAVQOVASMV 253 241 1 whis pakag a hybpdedlilpkokkdultutiowtimuallyclnfymgpiaml 295 135 FSWKYSHRRHHSNTGSLERDEVFVPKKKSDIKWYGKYLNNPLGRTVML/TVQFT-LGWPLY 193 186 bgwriabrthhapbghvendsswhplpes-i -y-kolekt-tymf:fflpfpmlsypfy 240 130 -- n--nwilwplywfaggtmfwaltvlgbdcgbgrfsndprlnsvagbllbssilvpy 185 -!- INDUCTION: BY LOW TEMPERATURES. :: SUBCELLULAR LOCATION: CHLOROFLAST, MEMBRANE-BOUND (FROBABLE). 312 ITDTHVAHHLESTMPHYHAMEATKAIKPILGEYYQ 346 75 PLLPHPLSYFAWPLYWACQGCVLTGVWVIAHEGGHHAFSDTQWLDDTVGLIFHSFLLVPY 134 TO USE FERREDOXIN AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS ESTERIFIED TO GALACTOLIPIUS, SULFOLIPIDS AND PHOSPHATIDYIGLYCEROL. 156 | 1 192 | 1 359 | 1 435 | AA; .. ----160 196 363 50136 MW; Score 681, 28-3; Longth 435; Fred. No. 2.17e 122; 72; Mismatches 199; Indels 23; Gaps 17; CHLOROPLAST (POTENTIAL).
TEMPERATURE SENSITIVE OMEGA 3 FATTY ACID
DESATURASE, CHLOROPLAST.
HISTIDINE BOX 1. HISTIDINE BOX 3. HISTIDINE BOX 2. 70613FE0 CRC32; --:: :: ::

Search completed: Wed Dec 17 11:07:74 1447 Job time : 37 secs.

/home/fuller/dec97/US-08-572-027A-8.rsp

Release 2.10 Ithn M. (**Hirry Birmomputing Resourch Unit. Copyright (c) 1945, 1444, 1445, Solvenoity of Schoburgh, N.K. Distribution rights by IntelliCenetics, Inc.

MPsrch pp - protein - protein database search, using Smith Waterman (Aprille

Run ca: Wed Der 17 11:09:07 1997; Machanisme 9,97 Oreside 816.764 Million cell updates/wer

Tabular output not generated.

Description: Perfect Score: Tit ie:

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Statistics tables 11 deg

Seut chedi: 59011 degs, 21218388 residues

Post-processing: Minimum Match 0%

Database:

Listing first 45 summaries

swiss-prot 34 lipart1 (hpart2 (hpart3 4)part4 (hpart5 6)part6 (hpart2 8)part8 (hpart4 10)part10 [lipart1]

Statistics: Mean 48.581; Variance 85.734; scale 0.567

Pied. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

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HEPPARD E.P., KINNEY A.J., STECCA K.L., MIAO G.H.;
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PLANT
PHYSIOL. 110:311-319(1996).
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01-FEB-1996 01-0CT-1996 P48630; 01-FEB-1996

(REL. 33, CREATED)
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RESULT

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2 Γ Ş Ş В В 궁 Ş Ы 3 1 Best Matches Query Match HEPPARD E.P., KINNEY A.I., MEGICA K.L., MIAO G.H.;
PLANT PHYSIGE. 110:311-319 (1996).

1 FIRETICH: FR (MICHARMAE) - MEGIC & FAIT) ACTS GENETOHASE [HIROSTOTE THE SECOND GOUSELEMOND IN THE SIGNSTHIESIS OF 18:3 FATTY ACTES, IMPORTANT CONSTITUENTS OF DIANT MEMBRANES. IT IS THOUGHT TO HIS CYTOCHROME 85 AS AN ELECTRON DONOR AND TO ACT ON FATTY ACTOS ESTERIFIED TO PHOSPHATIDYLCHOLLNE AND, POSSIBLY, OTHER DOMAIN EMBL; L43920; 6904152; -!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE AND/ OR BE INVOLVED IN METAL ION BINDING.
-!- TISSUE SEECIFICIT: CIGARALA BARBETSEL IN DEVELOPING SEECS. SEQUENCE. DOMAIN DOMAIN TRANSMEM TRANSMEM owlickEndIASE; FAITE which kick winds by ENGOPLASMOT EXITEDIAM MEDLINE; 96151506. FABACEAE EUKARYOTA; PLANTA; EMBEROPHRIA; ANGLOSPERMAE; DICOTYLEBONEAE; FABALES; TRANSMEM TRANSMEM TRANSMEM TRANSMEM TRANSMEMBRANE. -!- PATHWAY: POLYUNSATURATED FATTY ACID BIOSYMTHESIS SEQUENCE FROM N.A. GLYCINE MAX (SOYBEAN) FAD2-1 (EC 1.14.99.-). OMEGA-6 FATTY ACID DESATURASE, ENJORLASMIC RETICULUM ISOZYME I !- SIMILARITY: TO OTHER PLANT HE OMEGA 6 FATTY ACID DESAFORASES (ISSUE-SEED; 185 33 !- SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM. Sur linkvihnitathvahnlistmphyhameatsaakpalageyygfddrpfykalwrearen 36f 244 AAVQCVASMVCFYGVPLLIVNGELVLIFYLLHTHPSLPHYESSEWDWLRGALATVEREYS 30 c 104 - LIEBSELDVI 16 SWETS BREITS BERTHOLD DIE GERFEN ER ER EGSLEWI GERT LARE GERT VALS - 1 8 8 128 ltlhstllvpyfswkishrithsatysidrð-vfvpkpkskvawfskylanplyravsll 187 10 ggrgreakvevggkkp-lsrvpntkppffvgglkkarpphofqrslftsfsyevydlsfa 68 Match 69.5%; Local Similarity 70.3%; 4 SEMANDER CETTALISM CONTROL CHARACTER CONTROL TO A SEMANDER CONTROL C STILLTORGEORE SQETIGWELYTAINVOORI YICONARRERAAN IYOOREPLQOYOODAGITAV/YOOYBY (43) 251 109 1145 Cutisor vations 74 107 141 203 247 271 113 1111 V Scott 2105; PB 3; Length 387; Pred. No. 0.00e+00; 53; Michatches 55; Indels 3; POTENTIAL. HISTIPINE BOX 3. HISTIDINE BOX 2. HISTIDINE BOX 1. FOTENTIAL. FOTENTIAL. TVILMENGE 1.2. M. 46 45! x 45. Cape. 3.3

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ALDEY A.J., BETZ W.E., BENCH J.E. JE., DENWELSDE S., JECCA K.L.,
ALIZEN S.M., BLACKWELL M., REITER S.S., CARLIJON T.J., ROSSELL S.H.,
FELLMANN K.A., PIERCE J., ROOWSE J.,
FLANT PHYSIOL 163-467-476(1943).
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OLEMAN-1995 (REL. 32, LAST SEQUENCE HUDATE)
OLEMAN 1996 (REL. 33, LAST MANUSATION UNDATE)
OMERA 3 FATTY ACTO DESATURASE, ENDODIASMIC RETICULUM (EC 1.14.99.)
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CXILHEBURZARZI CARRA
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    PATHWAY: POLYMNSATHWATTF FATTY ACTD BIOSYNTHESIS.
    SOMOTILITIAR LOCATION: FUNDAPLASMIC RETICULUM.

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Pred. No. 7.70e-148;
78; Mismart der 166; Indel: 24;
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A CONTROL OF THE STANK AND THE Ş B Ş Ъ Ŷ д Ŷ ALLEN S.M., BLACKWELL M., REITER R.S., CARLSON T.J., RUSSELL S.H., YADAY N.S., WIERDENICKI A., ADDENIED M., CASTER C.S., FEREZ WAS I., KINNEY A.J., HITZ W D., ROOTH I.R. JR., SCHWITGER B., STECCA K.L., 01-PEB-1996 (REL. 33, LAST SEQUENCE UPDATE) 01-OCT-1996 (REL. 34, LAST ANNOTATION UPDATE) EMBL; L22931; G4U8483; -. NISHIUCHI T., NISHIMURA M., ARONDEL V., IBA K.; MEDIINE; 94345020. SUBMITTED STRAIN=CV. COLUMBIA; TISSUE=HYPOCOTYL; PLANT PHYSIOL. 103:467-476(1993). EUKARYOTA; PLANTA; EMBRYOPHYTA; ANGLUSPERMAF; DICOTYLFHONEAE; OMEGA-3 FATTY ACID DESATURASE, ENDURLASMIC RETICULUM (EC 1 14.99.). EMBL; D26508; Gli9//yo; EMBL; D17579; G4/1091; -. -!- DOMAIN: THE HISTIDING BOX DOMAINS MAY CONTAIN THE ACTIVE SITE PLANT PHYSIOL. 105:767-768(1994). STRAIN=CV. SEQUENCE FROM N.A. WATAHIKI M.C., SEQUENCE FROM N.A. FELDMANN K.A., PIERCE J., BROWSE J.; MEDLINE; 94302147. STRAIN=CV. COLUMBIA; TISSUE-SEEDLING; SEQUENCE FROM N.A. CAPPARALES; CRUCIFERAE ARABIDOPSIS THALIANA (MOUSE-FAR CRESS). FADE 01-FEB 1996 (REL. P48623; FD3E ARATH 246 QUOVASMULEVISPELLIVISELLULISELLUL ISSEMIMILIOALATVEREVI 38% 224 togpototkoygopy...tomw.casty.co.bjc.as.Lpwyrjkewsylrgglt: driby jik 188 - LOWPLYLAFNVSCREYDOOFACHEHEWAFLYMDRERLQIYLSDAGILAVCYSIYFYFAA 245 128 CELLVEYEGAKYSHKANNOWFJJJEKJEVEVEVEKKAGIJKWIJKYLKKELJUKTYMITVÇET [87 AND/ OR BE INVOLVED IN METAL ION BINDING. SIMILARITY: TO OTHER FLANT OMEGA-3 FATTY ACID DESATURACES FISOUR SERVICIOTY: ASOCIANT IN LEMBER AND OFFECTIVITY DETECTABLE IN ROOT FISOUR. FUNCTION: MICHOSOMAL (FB) OMBOASSEATTY ACTO DESATURASE INTRODUCES THE THIRD BOURDEBURG IN THE BLOCKHOISES OF 18.5 FATTY ACTOS. SUBCELLULAR LOCATION: ENDOPLASMIC RETICULUM. PATHWAY: POLYUNSATURATED FATTY ACID BIOSYNTHESIS ESTERIFIED TO PHOSPHATIDYLCHOLINE AND, POSSIBLY, OTHER CYTOCHROME B5 AS AN ELECTRON DONOR AND TO ACT ON FATTY ACIDS PHOSPHOLIPIDS. IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THOUGHT TO USE M.C., YAMAMOTO K.T.; (SEE-1993) TO EMBL/CENBARK/DOBJ DATA BARKS. COLUMBIA; STANDARD; CREATED) PRT; 30

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OH FEB-1994 (AFL. 33, CARAMED)
01-FEB-1994 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1994 (REL. 33, LAST ARROTATION UPDATE)
0MBGA-3 FATTY ACTF GESATURASE, ENDOPLACAMIC RETICULUM (FC 1.14.99.-)
                                                                                                                                                                      ARONDEL V., LEMIEUX B., HWANG I., GIBSON S., GOODMAN H.M., SOMERVILLE C.R.;
                                                                                                                                                                                                        MEDLINE; 93088059.
-!- FAIRWAIT FOLYONSATURATED FATTY ACTO BIOCHNTHEOIS
-!- GRIGHAUMIAR LOCATION: EMBODIASMIC BETTOURIM.
                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                  CAPPARALES; CRUCIFERAE.
                                                                                                                                                                                                                                                                                                       BRASSICA WAFUS (RAPE)
                                                                                                                                                                                                                                                                                                                           FAD3.
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                                                                                                                                                                                                                                                                                  FORMARIOTA; ILAKTA; EMBETÖLHYTA; ANGTEGETERME);
                                                                                                                                  ! FUNCTION: UR (MICROSOMAL) OMECA 3 PARTY ACTS DESATURASE INTRODUCES
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                                                                         IMPORTANT CONSTITUENTS OF PLANT MEMBRANES. IT IS THOUGHT TO USE CYTECHRUMS BS AS AN ELECTRON GONDER AND TO ACT ON PATTY ACTOR
                                   PHOSPHOLIPIDS.
                                                         PRINTER
                                                                                                                  THE THISD DOUBLEBOWN IN THE RISCYNTHESIS OF 18-3 FATTY ACIDS,
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                                                         TO BRUSH BATTLETISTICKE AND, FOSSIBLY, OTHER
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OXIDOREDUCTASE; FATTY ACID BIOSTNTHESIS; ENDOPLASMIC RETICULINA

-!- DOMAIN: THE HISTIDINE BOX DOMAINS MAY CONTAIN THE ACTIVE SITE

TRANSMEMBRANE

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01-007-1996 (REL. 34, LAST ANNOTATION UPDATE)
CMEGA 2 FARTY ACTE DECARTIBACE, EMPOPLASMIC BETTOTION (PC 1.14.84
                                                                                                                                                                                                                                                                                        FAD3.
                        HAMAFA T., KODAMA F., NISHIMURA M., IBA K.;
                                                         STRAIN=CV. SR1; TISSUF-LEAF; MEDLINE; 95011632.
                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                             SOLANALES;
                                                                                                                                                                                                                           EUKAKYOTA; FLANTA; EMBKYOFHYTA; ANGIOSPERMAE; DICOTYLEDONEAE,
                                                                                                                                                                                                                                                          NICOTIANA TABACUM (COMMON TOBACCO)
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GENE 147:293 294 (1994)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       '- SUSCELLULAR LOCATION: ENDOPLASMIC PETICULUM.
'- HOMAIN: THE HISTIDINE FOX FOMAINS MAY CONTAIN THE ACTIVE SITE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TRANSMEM
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01-FEB-1996 (REL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST SEQUENCE UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
0MENA * PATTY AND BENATURASE, CHIOROFIAST PRECURSOR (FC 1.14-99.-).

EUKARYOTA; PLANTA; EMBRYOTHYTA; ANGIOSPERMAE, DIGGTYLEDGREAE, PABALES;

GLYCINE MAX (SOYBEAN) .

FAD7.

рь Ş В В 2 Вþ <u>*</u>} DЬ Ş 쭕병원국관원의 Mut ches Best Leval Similarity 38.9%, Query Match DOMAIN I AMO CHAIN OXIDOREDUCTASE; FATTY ACID BIOSYNTHESIS; CHLOROFLAST; MEMBRANE; ANT/ OF RE INVOLVED IN METAL ION BINDING. -!- SIMILARITY: TO OTHER FLANT OMEGA 3 FATTY ACID DESATURASES EMBL: L25897; C414732; -. -1- STROPHATIAN (ACATION: CHLOROFIAST, MEMBRANE BOOMD (PROBABLE). PLANT THYSIOL. VAN DE LOG F.J., SEMBLE -U-PATHWAY: POLYUNSATURATRA FATTY ACID BIOSYNTHESIS. -!- FUNCTION: CHIMPOPLAST OMEGA-A FATTY ACTO DESAUTEAGE THIROGOURS MEDITINE; 94302177. STRAIN=CV. BAKER 296; TISSUE=SEED; TRANSIT PEPTIDE. 593 221 ghve::doswhpl--se-kif-ksldh-vtktlitslpfpm la-y-pfylwsrs-pgkkg 161 108 ppftladiraalpkhowykspwrsmsyvlidwyvvfgluavaa yt KANSIT 326 PHYHAMEATKAIKPILGERYQ 346 390 phyhlveateaakpvmgkyy: 410 149 GCLERBEVEVPKKKSDIKWYCKYLNNFLGKTVMLCVQETI WETTLAFWYSGFFTF-CFA 89 TWACQUCTETSYMVIAHKESHHAF SDTQWEDDIVELLTENSELLVETESWKYCHERHHSNT 148 29 PRETWEELKAIREHCHEKSIPKSESTLIMBIJIASCETTVATTYUFBLIFHELSTFAMPL 88 TO USE PERHADOWIN AS AN ELECTRON BONGS AND TO ACT ON FAITTY ACTOS (1974) THE TO-CHART FILE LONG FOR THE THIRD DOUBLEROND IN THE KICCEMENTS OF 1603 AND 1803 FATTY VLITYLQH-THES-LEHYDSSEMDWLRGALATVDKDTGILNKVEHNITDTHVÄHHLESTM dfvtylhhhghedklpwyrgkawsylrgglttldrdygwinnihhdi-gthvihhlfpqi shfhpdcglfvpkcrkdi-itstacwtamaallvylnfsmqpvqmlklygipywifvmwl ywfeqytmfwalfvlyhdeghysfsnnpklnsvvgbllhssilvpyhgwrishrthhqnh 220 CHEHRHARIAMEREKIĞIYISTASILAVOYGLYRYNA VQOVASMUTEYOVPILIVNOFL 267 125, Conservative 460 AA; IMPORTANT CONCERTED OF PLANT MEMBERSON IT IS THOUGHT 177 213 105:443-444 (1994). SOMERVILLE C. 181 217 SOSKI MW; DRODNASS CROSS; 23.8%, J , Soute 721; DB 3, Length 460, Fred. No. 1.40-131, 10dels HISTIDINE BOX 2. HISTIDINE BOX 1. CHIUKOPLAST OMEGA-3 FATTY ACID DESATURASE, CHIOROPIAST (POTENTIAL). Length 460; = = : n nwyawpl 160 :: :: sdes

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-!- DOMAIN: THE HISTICINE BOX COMAINS MAY CONTAIN THE ACTIVE SITE
AND/ OR BE INVOLVED IN METAL ION BINDING.
-!- SIMILARITH: TO OTHER FLANT OMESA 3 FATTY ACTO DESATURASES.
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01-FFB-1996 (BFL. 33, LAST ANNOTATION UPDATE)
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THE THIRD DOUBLEBOND IN THE BIOCXYTHEOIC OF 16:3 AND 18:3 FATTY
ACTO, IMPORTANT CONFETTIVENTO OF FLANT MEMBRANIC IT IS THOUGHT
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80; Mismatches 114; Indels 19;
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OMEGA : FATTY ACID DESATURASE,
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KINNEY A.J., HITZ W.D., BOOTH J.P. JP., SCHWEIGER R., STECCA K.I.,
ALLEN S.M., BLACKWELL M., REITER R.S., CARLSON T.J., RUSSELL S.H.,
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-!- SIMILARITY: TO OTHER PLANT OMEGA-3 FATTY ACID DESATURASES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FELDMANN K.A., PIERCE J., BROWSE J.; PLANT PHYSIOL. 103:467-476(1993).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GLYCINE MAX (SOYBEAN)
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   145 HONTOCIERDENEVERPRODICWEGEVELEVE CONTWEITVATE
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                                                                                                                                                                                                                                                            25 PCETWPETVGELKKAIHTHGEKKGIPKGESTLIWDIIIASGETYVAITTEFLLIMELSIE 54
                                                                                                                                                                                                                                                                                    PATHWAY: POLYUNGATURATED FATTY ACID BIOSYNTHESIS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FUNCTION. MICROSOMAL (ER) OMEGA-3 FATTY ACID DESATURASE INTRODUCES THE THIRD HOUSELEOND IN THE BIOSYNTHESIS OF 18-3 FATTY ACIDS, IMPORTANT CONSTITUENTS OF FLANT MEMBERGES. IT IS THOUGHT TO USE CYTOCHROME BS AS AN ELECTRON BONDER AND TO ACT ON FATTY ACIDS
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                                                                                                                                 AWPLYWACQGCVLTGVWV1AHKGGHHAESDYGWLDDIVGLIEHSELLVFYFSWKYSHRRH 144
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HISTIDINE BOX 2.
HISTIDINE BOX 3.
HISTIDINE BOX 3.
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             EMBL; 014007; 0141653, ...
EMBL; 026019; 0468434; ...
UALDONALDULADE; FARTI ALTO BIGUTATHEUTO; CHICROTLADT; MEMBRANE,
TRANSIT PEPTIDE.
                                                                                                                                                                                                                                 ESTEPHIED TO ALAMONDHIES, SHEWLIPIES AND PROPERTICATION OF YORROLL

-!- PARHWAY: POLTUNGATED FAIT ACTO BIOSINTHESIS.

-!- STANDARD FOR A THE ATTEMPT ACTO BIOSINTHESIS.

**TICHUR OF THE OFFICIAL ACCORDANCE FOR ACCORDANCE OF THE ACTIVE SITE

-!- CAMAIN: THE HIJITEINE BAY COMAINS MAY CONTAIN THE ACTIVE SITE
                                                                                                                                                                                                                                                                                                                                                                                                                     IBA K , directly of high-horse T , forest , significant, arounded V_{\rm s} , somerville o ;
                                                                                      EMBL; _22961; G408481;
                                                                                                                                                                                                                                                                                                                              WATAHIKI M., YAMAMOTO K.;
                                                                                                                                                                                                                                                                                                                                                 STRAIN=CV. COLUMBIA; TISSUE HYPOCOTYL;
                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDIJNE; 94043239.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-CV. COLUMBIA; IISSUE-AERIAL PARTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ARABIDOPSIS THALIANA (MOUSE-EAR CRESS).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UMEGA-3 FAITY ACID DESATURASE, CHIDROPLAST PRECIBSUR (EC 1.14.99.-).
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                                                                                                          AND/ OR BE INVOLVED IN METAL ION BINDING.

' SIMILARITY: TO OTHER FLANT OMEGA-4 SATTY ACID RESATURASES
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAPPAKALES; CRUCIFERAE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 LESTMPHYMANATANICHTER 101
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CHICKOPLAST (POTENTIAL)
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WATABIKI M.C., YAMAMOTO K.T.;

KNIMBIKI M.C., YAMAMOTO K.T.;

SUBMITTED (SEP-193) TO EMBL/GENBANK/DUBJ DATA BANKS.

SUBMITTED (SEP-193) TO EMBL/GENBANK/DUBJ DESAFTIBAGE INTRODUCTS

-! EUNCTION: GRIOROFIAST OMEGA-3 FATTY ACID DESAFTIBAGE INTRODUCTS

THE THIRL PROBLEM OF THE PROSTRIPESIS OF 16-3 AND 18:3 FATTY

THE THIRL PROBLEM OF THE PROSTRIPESIS OF 16-3 AND 18:3 FATTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-FPR-1996 (RFL. 33, CREATED)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
01-FEB-1996 (REL. 33, LAST ANNOTATION UPDATE)
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Search completed: Wed Dec 17 11:10:55 1997 Job time : 58 secs.

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Query Match 20.8%; Perio 240; PS 55; Ength 386; Root Local Similarity 83.3%; Pred. No. 0.86e+00; Matches 225; Comportative 0; Migmithhop 61; Indols 4; Caps 3;
Tel: 517 353-0854 Fax: 517-353-9168 Fmail: 2242-conjibm.cl.msu.adu Location/Qualitiers 1.386 /organism="Arabidopsis thaliana" /clone "SCFIUTP" /strain "var columbia" BASE COUNT 84 a 114 c 78 q 110 t
Contact: Thomas Newman MSU DDE-PRL, Michigan State University MSU DDE-PRL, Michigan State University,Plant Biology Bldg.,E. Jansing Mi
REFERENCE I (Dases 1 to 300) AUTHORS Remain, T., de Bruijn, F.J., Green, P., Keegstra, K., Kende, H., McIntosh, L., Ohlronge, J., Baikhel, N., Somerville, S., Thomashow, M., Betzel, E. and Somerville, C. Prime Source juliance as a superior of anonymous Arabidopsis oNNA clones and physical 104, 1241 1255 (1994)
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TOCUE KEYWORDS BELEBENCE ACCESSION No. LINITION Genes deleter a summary of methods for accessing results from large-scale partial sequencing of anonymous Arabidopsis oTNA clones Plant Physiol. 106, 1241-1255 (1994) Bowman,T., do Bruijn,F.J., Green,F., Keegstra,K., Ketde,H., Mofretesh,L., Oblingpe,J., Balkhol,W., Comerville,C., Thomashow,M., An abidopsis thallana resettes, 4) same plants as 2 but social tissue (stems, flower fell) as a The serial is Bett's limited (fig. lix.) The SDNA thale cross close-107115T7 library-Lambda-PRL2 strain=var columbia vector lumbda-Cip-Lox primer T3 dye primer Salte1-Gal Roite2-Not Lambda-PRL2 is a cDNA library derived from equal quantities of 4 pools of maNA. The mRNA sources were 1) 3 day germinated etiolated EST. 723852 Botzol, F. and Somerville, C. Brassicaceae; Arabidopsis. primed cDNA. with 24 hour light cycle, half on 16 hr light, 8 hour dark-4860 Arabidopsis thaliana chwa clone 107L15T7. Contact: Thomas Newman Eucaryotae; Embryophyta; Magnoliophyta; Magnoliopsida; Capparales mserts were directionally cloned with Sal-Not arms using oligo seedlings; 2) tissue culture grown roots; 3) staged plants half 34.77553 (bases 1 to 528) 17 8 5 T -DNA flowers

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transcriptase (Phirmacia). Second-strand dDNA was made
using the procedure of Gubier and Hoffman (1967) occupi
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that DNA ligase was umitted.
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       After the second strand
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NOLLINIABL 20ery Match 16.45; Score 189; DB 118; Lyngth 534; Rest Larval Similarity 83.68; Bred. No. 0.00e+00; 9.06 EQUALIVER ENGLISTED CONTROLLED CONTROLLED OF STATEMENT OF STATEME 1188 ψεληλλετήματή στης Ελληλλικής Αυβάντης Επίστης Ελληλλικής Επίσες 1986 241 graatagtetocoagaattggetttategeetttgtagetteeattgegttataatgegg 300 | 122 | Laurant Attentist accupt on or new terms of constructing strongget tot on [80] . o . thile cross close-1351507 library=Lambda-PRL2 strain=var columbia whether bumbda Dip New primer TO dye primer Esitel Sal Rsite2=Not Lambda PRL2 is a SDMA library derived from equal quantities of 4 744100 934 km Abid-gels thallana 20NA 210ne 13515TT. g934337 141 a 113 c 114 g CONSIDERATIONS INC. When this likeary is used please reference the ARRC and Kieber, J. et al. (1993) Cell 72:427-441.*
/clone "H1C1277" <1...>534 /tissue_type:"sendling hypocotyl" /dov_st_np="% day.old" packaging extract (Stratagene). We have determined that although first strand offNA synthesis was initiated using dT, almost all of the cDNAs begin 8-10 bp from the poly-A tail is most tail. The reason for the loss of the poly-A tail is most adapters by spun-column chromatography using sephacryl scano and size-(randomated on a 1% low melting point /clone lib="CD4-16" during the Klenow repair of ragged ends before the addition of linkers (3'-5') exc instead of 5' 3' pol). ligation mix was parkaged in vitro using Gigapack II gold arms and then ligated in a velume of 4 sl overnight size fraction (0.1 mg) was co-precipitated with 1 mg of NaOA+ (pH 7) /-thated. A portion of each cDNA phenolicholoroform extracted and precipitated using 0.3 M $\,$ mini gel. Size selected cDNAs (3 - 6 kb) were removed from the jel using against (New England Richabs), to each end. fragment and EcoRI/NetI adapters (Pharmaria) were ligated likely due to lower than anticipated nucleotide levels lambda/apil (StratageneEroRl digested, dephosphorylated reardion, the ends of the ADNA were made blunt with Klenow n; Mismatches 46; Indels The cDNA was purified from unligated 145 t 21 others 3; Gaps

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ORGANISM Hamman, T., Jan Brvija, P.J., Grand, P., Kangstia, K., Kanda, B., McIntosh, L., Ohlingga, J., Balkhal, H., Camarville, C., Thomasham, M. Retzel, E. and Somerville, C. Arabidopsis thaliana rosettes; 4) same plants as 3 but acrial tissue (stems, flowers and siliques. The vector is BRL's lambda fig law. The EMA inserts were directionally closed with Sal Wet aims using clips dT seedlings; 2) tissue outture grown roots; 3) staged plants half Brassicaceae; Atabidopsis. primed cDNA. Eucaryotae; Emboyophyta; Magnediophyta; Magnediopsida; Capparales; with 24 hour light cycle, half on 16 hr light, 8 hour darkpools of mRNA. The mRNA sources were 1) ? day germinated eticlated (bases | to 564)

REFERENCE INNAMO SAULHORS

COMMENT Genes galoro: a summary of methods for accessing results from large-scale partial sequencing of acceptous Arabid pais 1998 (1994) plant Physicl. 196, 1941 1995 (1994) Contact: Thomas Newman

MSU-DOE-PRL, Michigan State University, Plant Biology Bldg., E Michigan State University Lansing, Mi

MSU-DOE Plant Research Laboratory

Tel: 517-353-0854

FEATURES Fax: 517-353-9168 22313tcn@ibm.cl.msu.edu. Location/Qualitiers

/strain "var columbia" /organism="Arabidopeis thaliana" /elone:"13515T7"

80410€

BASE COUNT 85 a 89 c i ii ψ; Φ1 i8 others

ORIGIN

Query Match Best Local Similarity 83.30; Matches 224; Conservative Fired Mr. O. Charles, Longto Vol. 6; Mismatches 45; Indels 0; Gaps

Ş 691 GCTGDLAJCC1CGCCGTCTGCTACGAJCTCTCTACGTTACGCCGGCCGGCCAGGGAGGAGGGGCC750

G G 751 TCGATOGTCIA IICTA GAAGGGGGGAATGGGAATGGTCAATGTCTCATCTTGATC 810 73 togafgafetneetetaeyyagbaccyethetaabagbhaabnentbeebngbebbgate 132

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Ş ф 193 etcaggggagetttggetvergtaguragaguntaegguutettgaacaaggtgttelac 252 TTCASSSEASCTITESCIACCSICSCASSACALIACSCASICTESAACASSICTECAC 930

님 253 aacattacaggcacacacqtygntoatna 281

Ş 931 AATATTAGGGACAGGGAGGTGGGGGGATGA 959

ACCESSION SIDOT DEFINITION F14291 A. thaliana transcribed sequence; close 08073; 3' end ATTSS213 34≘ bp DNA

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KEYWORDS ORGANISM Arabidopsis thaliana represent sequence tag; partial cDNA sequence. Eukaryotae; mitochondrial eukaryotes; Viridiplantae;

REFERENCE Chatophyta(Emboyophyta group; Embryophyta; Magnoliophyta; Magnoliopsidu; Capparahes; Brassicaceae; Arabidopsis. 1 (bases 1 to 340)

PEREFERCE \$1000 E T1 911.5 AUTHORS Sibmitted (30-000-1995) (NES, GDB-1603 A/S, IMSA, laboratoire de Biologie Moloculaire, BF 27, 31326 Castanet-Tolosan cedex, France. E-mailogdr-syp@loulouse.inja.fi. On behalf of: CNES, Jaboratoire de E-mail:lecharny@bdp.ibp.u-psud.fr 2 (bases 1 to 340) Biologie do decelogrement des plantes, institut de Biotechnologie des Plantes, Bat 630 91405 Orsay, France Direct Submission Krivitzky, M., Jean-Jacques, L., Kreis, M. and Lecharny, A.

COMMENT TITLE JOURNAL Unpublished Cloning vector: ZAFII ; The Arabidopsis thaliana transcribed genome: the GDR cOWA program

full automatic. A.thaliana; Physiological conditions: roots of mitrate treated liquid cultured

ORIGIN BASE COUNT FEATURES Source /organism "Arabidopsis thaliana" /clone="QNO73" A. Chaliana" 1...340 /tissue_type-"roots of mitrate treated liquid-oultured Location/Qualifiers 61 4 10, 4 3 others

g Query Match 14.1%, Scote 163; DB 123; Length 340; Note 160; Note 1

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KEYWORDS MOTESSION DOCUS T14176 310 bp mRNA EST DEFINITION 2341 Arabidopsis thatiana oPNA clone 48F12T7 RESULT T14176 g931129

venter=lambda 7ip Tex primer=77 dye primer Psite1-Sal Psite2-Net Lambda PRL2 is a cRMA library derived from equal quantities of 4 pools of mBMA. The mRNA sources were 1) 7 day germinated etiolated

thale cross clone=4891257 library Lambda PB12 strain var columbia

seedlings; 2) tissue culture grown rects; 3) staped plants half with 24 hour light cycle, half on 16 hr light, 8 hour dark-rosettes; 4) same plants as 3 hut aerial tissue (stems, flowers and siliquer. The centry is 80% of lamber 25p loss. The CDA

inserts were directionally closed with Cal-Not aims using oligo dr

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26 ₽, 문 ć, 문 ç 9 Ç ŝ Ωŀ BASE COUNT ORIGIN FEATURES COMMENT REFERENCE 300,800 Query Match: 13.3%; Score 153; BB 134; Length 432; Best Lind Clarify 79.2%; Ered. N., 2.19e-257; Matches 228; Conservative 0; Mismatches 54; Indels 6 - 8 TVRHUD AUTHORS OP CAN I SM 1035 ATAATACTCTCCCAGTATCGGCTTTATCGCCTTGGTAGCTTCCATCG-CGTGATAATGCG 977 264 of battagtistissisgisattiggstitt attigsstitt glinghttishingtiggngt fat aatigsgi 323 200 olaqabacadloctliqoctooctatacatoopdiacatacaaaggigtgttccatogaactg 260 976 C CATUST-GGAGAACCATUATOGGCCACGTGCGTGTC-GGTAATATTCTGGAAGACCT 920 324 sqcattqtcqqaqaasqqqtqatqaqcscqtqtqtqnctnqaatqttqtnqnacacct 383 «Т« тыстраддары сырдары Тейдерадардардардардары Адарты 274 384 ttgntnäängttoengtngtntttgtttnnggnaggecaaggtteent 431 Lansing,Mi Tel: 517-353-0854 Fax: 517-353-9168 Michigan largerscale partial sequencing of analysmus Arabidopsis cDNA clones plant Physici. 106, 1241-1255 (1994) Retael, B. and Comerville, C. Gerhods for accessing results from Newman,T., de Bruijn,F.J., Green,P., Keegstra,K., Kende,H., M.Intiul,L., Shirajay,F., Baikhel,W., Comerville,C., Thomashow,M., Arabidopsis thallana with 24 hour light cycle, balf on 16 hr light, 8 hour dark-rosettes; 4) same plants as 3 but aerial tissue (stems, flowers and sillyand, The litry was majoric N vaget's Lamba Chlosel columbia vector Lambda Chlex 1 Rsitel EccRI Rsite2-HindIII Lambda ERULLs a cEWH labrary derived from equal quantities of 4 pools of mRWA. The mRWA sources were 1) 7 day germinated etholated souldlings; 2) tissue dultate grown rouls; 3) staged plants half MSU DOE PRI, Michigan State University, Plant Biology Bldg., E. MSU-DOE Plant Research Laboratory Brassicaceae; Arabidopsis. Thalo Tress Floro CTHRT7 primor=T7 library=lambda=PRL1 strain=var Contact: Thomas Newman Eurodiyotası ilmbiyopliytar Magiroliopliytar Magiroliobustağı Cappataloği and Hindlil sites. with (oligo dT primed) directional inserts cloned between the BcoRI (bases 1 to 432) 119 a 22313tch@ibm.cl.msu.edu. <1...3432 /clone "G7H3T7" /strain."var columbia" State University 1..432 Location/Qualifiers vidaniem "Miabldopsis thaliana" 100 € 0; Mismatches 54; Indels 6; Gaps 75 g 122 t 16 others

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Query Ma Best Loc Matcher	FEATURES SOURCE BASE COUNT ORIGIN	AUTHORS TITLE TOURNAL COMMENT	ORGANISM	LOCUS DECINITION ACCESSION NID KETFOALG SUUPCE
y Match 12.7%, Object 146, OR 64, Decycle 127, Local Similarity 81.4%, Pred. No. 1.86e-242, her 192; Concorvation C, Mismatcher 42, Indexs C, 64, 64 137 adaptically decreasing C, Mismatcher 42, Indexs C, 64, 67 137 adaptically decreasing the object of t	Michigan State University MSU DOE PRL, Michigan State Lansing,Mi Tel: \$17-353-0854 Fax: \$17-353-9168 Email: 22313tcn@ibm.ci.msu.e Location/curiiiluts 2.1431.co. "Aralida" /clone="10501077" /strain:"var column 102 a 106 c 92 g	Rewman, T., de Busin, P.J., Czeen, P., Roegstra, K., Rondo, H., Remman, T., de Busin, P.J., Palkhel, M., Comercille, C., M. esshew, M., Melnirsh, L., dilt. j., J., Palkhel, M., Comercille, C., M. esshew, M., Retzel, E. and Sumerality, C. Genes galore: a summary of methods for accessing results from large scale partial sequencing of anonymous Arabidapsis of MA educes Plant Physicial 196, 1041-1255 (1944) Contact: Thomas Newman	pouls of mRNA. The mRNA sources were to regard pouls of mRNA. The mRNA sources were 1)? day germinated eticlated seedlings; 2) these oblivious promit roots; 3) stayed plants half with 24 hour light cycle, half on 16 hr light, 8 hour dirktrated in sellous. The vector is BRN's lambda Zip Loa. The corn inserts were directionally cloned with SalaMot arms using oligo dT primod cDNA. Arabidopsis thaliana Encaryotae; Embryophyta, Magnelliphyta; Magnelliphalda; Capparales; Brassicaceae; Arabidopsis.	T22639 467 Arabidopsis thiliana aBMA close 18501077. 722639 q932531 E33. thalo reper alone taketer? Lithiaty-Lambda-PB12 strain-var aniambia vector=lambda fir los refect T ² dys primer Pairel-Sal Pairel 32. Lambda DB12 is a chua libiaty deviced from semal materilies of 4.

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Ę ;7 BASE COUNT ORIGIN AMBROD TANAHON REFERENCE AUTHORS TITLE KEYN-SES SOUPCE 4 ÷ 2 7 7 콧 2. Ş Jantag DEFINITION Query Match 12.1%, Score 140; DR 197; Longth 226; Rost Lonal Similarity 33.1%; Pred. No. 1.05e-229; Mitches 909, October 21.0 9; Michelbes 87; Indees 1; Oaps ORGANISM TVRHIOF 136 (1997) 13 (1997) 14 (1997) 14 (1997) 15 (1 76 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 377 | 3 111 THE THE STREET OF THE HEIGHT HE SHEET TO SEE THE STREET OF STR 315 typothectigite 326 See a subsequence de succession de la compactificación. An especial de la Caracterna de Caracterna d Boolds, C., Akibama, M., Seda, M., Marrigochi, M., and Omora, M., Expressed Separate Tajs of Contas Front at Hapold Seveloping Stage Dapublashed (1996)

Photherm (Separate Action Communication) Citrus unshiu Omura, National Institute of Fruit Tree Science, Okitsu, Department of City Cathery Okitsu, Chimicu, Chimoka 424 02, Japan (F mailteomy) Okitsus, Stirring Science 42 69 2111, Direct Submission Submitted (29 SEP 1996) to the DDBJ/EMBL/ConRunk databases. Mitsuo 1 (buses 1 to 326) Omura, M. Foliayot on Viridiplast on Embryophyta, Mapoliophyta, ETT(capressed sequence tag).

"First unding (strainMiyyarwa-wase sitsuma mandarin) at rapid best-picture for an end pulp segment "PNA to mRNA, elemen-peMPP1807.131. g1664કેરે6 Citius cDNA, partial sequence (pcMFRI807.131). Mugnolioperda; Rosidan; Sapindales; Butaroan Pakit81 540 69 2115) 65 a /tissue type-"juice sac and pulp segment" a 101 c 58 g 104 t /strain="Miyagawa wase satsuma mandarin" /clone="poMER1807.131" 1...326 samilifeto, and thers /dev_stage "at rapid developing stage" /organism "Citrus unshiu" 17. JONA 153 01-NOV- 1995

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Ŷ Ş Db. 8 9 Ş В Б Ş DЬ Ş g FEATURES LOCUS ORIGIN BASE COUNT COMMENT KEFEPENCE SOURCE KEYWORDS ACCESSION DEFINITION Query Match 11.5%; Score 13; DB 55; Length 540; Best Local Similarity 71.9%; Pied. No. 6.93e-215; Matches 233; Crispry Fibe 8, Wichmarthus 89; Indule TITLE Matches 233; Conservative JOURNAL. AUTHORS **URGANISM** source 1064 CUATGICGAGGCAGGCGAAGGAGT 1987 1004 ада саталасскатастовластатататтатсак позаплада воситъстталас 1063 319 augobatcaagcetataa(gggtgagtaftaccggtatgatggtnc-ccaffffacaagg 377 378 cattgtggagggag-caaaggaat 400 199 tygtgactgtcgatuguguttutggggtgttgaataaagtattccataacattgcagaca 258 764 TCTACGGAGTOCOGO PROPOSITIONICAA BARLLINO TONIGITIGA BUACTIACITIGNAGE 823 79 totatggggtgccattychlarrynnaachghlicchtghtatgahcacatachlycago 138 T15239 540 bp mRNA EST 28 JUL-19 crs834 Ricitus communits cDNA clone pers834 similar to plant Carnegie Institution, 290 Panama St, Plant Physiol. 138, 1141-1150 (1495) closed directionally into XhoI (3) and EcnRI (5) sites. In few cases, sequence data indicated that this directionality was Tel: van de Lee, F.J., Turner, S. and Somerville, C. Ricinus communis reversed. Partial cDNA clones predominate. . was purified from developing stage III to stage V (Greenwood & Bewley, Can. J. Bot. 60:1751-1760, 1982) endosperm plus embryo of castor kean close p.rs834 literary lambdaZAPST strain-Paker 296
vector lambdaZAFSI primer=T3 Raited EdeRI Raited=XHoI Poly(A) + RNA EST. Email: crs@andrew.stanford.edu. Expressed sequence tags from developing castor seeds Euphorbiales; Euphorbiaceae; Ricinus. Eucaryotae; Embryophyta; Magnoliophyta; Magnoliopsida; Rosidae; immature castor fruits. cCNN was synthesized and cloned into lambdaCAFTI according to the instructions of the manufacturer g688892 membrane-bound fatty acid decatarase homelogue. Contact: Somerville CR (Stratagene): synthesis was primed from the poly(A) tail, and (bases 1 to 540) 4153251521 ñ /clone:"pers834" /strain "Baker 296" = 104 c | 134 g | 146 t 1..540 /organism-"Ricinus communis" Location/Qualifiers 0, Mismatches 89; Indels 2; mRNA Stanford, CA 94305 24 others 28 JUL-1995 Gaps 13

Dec 17 14:44 /home/fuller/dec97/US-08-572-027A-1.rst

Search completed: Wed Doc 17 14:45:36 1997 Job time : 1320 secs.

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Release 2.10 John E. Collins, Ricocomputing Research Unit Copyright (c) 1993, 1994, 1995. University of Edinburgh, Distribution rights by IntelliGenetics, University of Edinburgh, U.K.

MPsrch nn n.a. - n.a. database search, using Smith-Waterman algorithm

Species 50,609 Hall False Ash (11125, 11 and Pam

973.511 Million cell updates/sec

Tabular output not generated.

N.A. Organical Scoring table: Description: Perfect Score: Title >US-08-572-027A-3 (1-1155) from Undas72007A ord 1154 Gap 6 TABLE default 1 American contract and the first TACCCACGTCCACCITUITA.CATGTTGTTATTCAATACT ALL VALUE TWENTY VALUE AND VALUE

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Searched. 707117 sequ, 20669220 lines

Post-processing: Minimum Match 0% Listing first 45 summarics

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Database: HESSEL PROMOTO SECONO 4 DEPONA 5 DEPONA EST-CTC TWO
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105:EST100 104:EST104 107:EST107 108:EST107 108:EST107
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115:EST110 121:EST111 127:EST113 123:EST112 114:EST114
1170:EST110 121:EST1114 127:EST113 123:EST112 114:EST114
1170:EST1107 124:EST1114 127:EST113 123:EST112 114:EST114 99:EST94

Dec 17 15:53 /home/fuller/dec97/US-08-572-027A-3.rst

	198:EST198	196:EST196 197:PST197 198:EST198	196:E22196	195-837195
194 · FST194	1939500193	305.HT. 303	191:E22191	06.ESZ1.061
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179:EST179	178:EST178	177:EST177	176:EST176	175:EST175
174:EST174	173:EST173	172:EST172	171:EST171	97.TET1:071
169:EST169	168:FST168	167:EST167	166:EST166	165:EST165
164:EST164	163:FST163	162:EST162	161:EST161	160:EST160
159:EST159	158:EST158	157:LST157	156:EST156	155:EST155
154:EST154	153:EST153	152:EST152	151:ES":151	150:EST150
149:EST149	140.001146	147:EST147	146:EST146	145.EST145
144:EST144	140.EST143	142:EST142	141;EST141	140:EST140
139:EST139	138:201138	137:E5T137	136:EST136	155:E51135
134:EST134	133:EST133	132:EST132	131:EST131	130:EST130

31 May 17 Sec. Model 10,960; Parlack 2,060; Shala 5,276

First. We is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	76 77 2 7 444 117 ATTOSASM A. Chalippo to 26 73 210 400 112 ATTOSASM A. Chalippo to 26 73 210 400 112 ATTOSASM A. Chalippo to 27 20 210 400 112 ATTOSASM A. Chalippo to 27 20 210 400 112 ATTOSASM A. Chalippo to 27
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ALIGNMENTS

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DEFINITION	Arabidopsis thalia
ACCESSION	H36908
NID	9906407
KEYMOKUK	EST.
SOURCE	thale cress clone 180K15T7 library-lambda-PRI2 strain-war columbia weetor=lambda gir isy reimon mildum reimon Belief [0] Belief [0]
	Lambda PRL2 is a cDNA library derived from equal quantities of 4
	pools of mRNA. The mRNA sources were 1) I day germinated ettellated
	seedlings, 2) tissue culture grown roots; 3) staged plants half
	with 24 hour light cycle, bull on 16 he light, 8 hour dark
	resettes; 4) same plants as 3 but merial tissue (stems, flowers
	and siliques. The rector is RRL's lambda Zip Lex. The cDMA
	inserts were directionally closed with Sal-Not arms using oligo dT
	primed cDNA
ORGANISM	Arabidopsis thaliana
	Eucaryotae; Embigaphyta; Magnalasphyta; Magnalaspaida; Capparales;
	Brassicaceae; Arabidopsis.
REFERENCE	1 (bases 1 to 608)
AUTHORS	Newman, T., de Brunju, F.J., Green, F., Keegstra, K., Kende, H.,
	McIntosh, b., Ohlrogge, d., Saikhal, M., Comerville, C., Chemache, M.,
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JOURNAL	Plant Physiol, 106, 1241-1255 (1994)
COMMENT	
	Contact: Thomas Newman
	MOU DOE Frank Research Laboratory
	MSU-DOE ERL, Michigan State University, Plant Biology Bldg., F.
	Lansing, Mi
	Tel: 517-353-0654
	Fax: 01/-003-9166
	Email: 22313tcm@ibm.cl.msu.edu.
FEATURES	Location/Qualifiers
source	
	/organism-"hrabidopsis thadiana" /olone-"180K15T7"
	/strain="var columbia"
BASE COUNT	126 a 158 m 126 y 138 m 12 milets
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Best Local Similarity 8.5%; i.e.d. N. H. Frun;
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McInt.sh,I., Obl. jy,I., Paikbol,N., Openville,E., Thomashow,M.,
Retzel,E. and Somerville,C. Brassicaceae; Arabidopsis. Arabidopsis thaliana primed cDNA. 746832 T46837 S12 bp mRNA Title 1450077. Contact: Thomas Newman l (bases 1 to 512) Eucaryotae; Embryophyta; Magnoliophyta; Magnoliopaida; Capparales; 949806

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Вb QV 밁 NID Ş 9 SHOCE Ş 5 Ç FEATURES COMMENT Ş ORIGIN BASE COUNT **BDEFRUNCE** KEYWORDS DEFINITION. SOUBLE ACCESSION TITLE Matches AUTHORS ORGANISM JOURNAL 547 APARTOMARIO ACTICACON DIRECTOR DE LO CONTROL DE LA CON 370 CHARCITECACICCTICCT CICGICO TRACITETE IN INAAAHAAAAAAAAAAA 422432 429 606 TTACCACGG 614 316 acceptocagettigtoctoggytiggocottigtacttillaggoottiavangtittigggnagooci 375 481 FOAGATA FOAACTOOTACOO AACTAO TOAACAACO TTTO OCACGATGTGATGTTA 546 376 gtntgacgg 384 61 candattedaadactggatedettggaaaqagatgaagtatttgfoonaaaynagaaafna 120 / Match 20.6%; Local Similarity 83.1%; 324; Conservative tissue culture grown roots; 3) staged plants half with 24 hour light cycle, half on 16 hr light, 8 hour dark rosettes; 4) same plants as 2 but aprial fissue (stems, flowers and siliques. The litury was made in Novamon's findia CT \ 2008 ACT (-1) IT primed directional inserts cloned between the FoRH and HindIII sites. Large-scale partial sequencing of an hymous Arabidopsis CDMA clones Plant Physicl. 106, 1241-1255 (1994) Hownish J. Jo Bis Joseph C., Green, P., Keephitra, K., Kende, H., McIntosh, L., Ohlregge, J., Raikhel, N., Somerville, S., Thomashow, M., Genes galoter a summary of methods for accessing results from Retzel, E. and Somerville, C Arabidopsis thaliana obtA library derived from equal quantifies of 4 pools of mRMA, mBMA sources were 1) $^{-2}$ day germinated of clusted seedlings; 2) thale gress clone "GF1977P library=Lambda-PRII strain=var columbia vector=Lambda Shlox-1 Rsitel-EcoRi Rsite2 HindIII lambda FRUI is a g315253 T04093 43 Arabidopsis thaliana oDNA cloue SCF10T7P. Email: 22313tcn@ibm.cl.msu.edu. Fax: 517-353-9168 Lansing, Mi MSU-DOE-PRL, Michigan State University,Plant Biology Bldg.,E. Michigan State University MSU-DOE Plant Research Laboratory Contact: Thomas Newman Brassicacese; Arabidopsis. Eudaryotae; Embryophyta; Magnoliophyta; Mognoliopsida; Capparales; T04093 (hases 1 to 386) 200 /organism "Arabidopsis thaliana" /olone="SOF10T7P" /strain-"var columbia" 353-6854 Location/Qualifiers . 385 386 bp Pred. No. 0.00+00; Score 238; DB 55; Length 386; 0; Mismatches 62; Indels 4; 78 g 110 t

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Plant Physiol. 111 (2), 577-588 (1996)
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Hwang,I. and Cho,M.J.
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Fax: 517-353-9168
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McIntosh, L., Ohlrogge, J., Paikhel, N., Somerville, S., Thomashow, M.,
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was catalyzed by Molocey murito-leademia virus reverse transcriptase (Pharmacia). Second-strand cDNA was made using the procedure of Gubler and Hoffman (1983) except that DNA ligace was instited. After the second strand
                                                                                                                                                                                                                                                                                                                        template and oligo d(t) as primer, first strand synthesis
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KEYWORDS SOURCE

thale cross clone=1351507 library=lambda FRL2 strain=var columbia vector lambda Zip-Lox primer T7 dye primer Rsitel=Sal Rsite2=Not Lombda FR12 is a 1988 library derived from equal quartifies of 4

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9363 Arabidopsis thaliana cDNA clone 13515T7

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Boost Lowal Similarity 83.68; THE THE PROPERTY OF THE PROPER 1155 TOATAACTTATTOTACCAGAACACACCTTTCTCACCTTGCCTGGCGGTTCGGCTGCAC 1096 §35 CATCCTCIAGAACGAIGAIGA DAGGA ACGAIGCGIGGGGGGGGGGATAATATTGGGAAGACCTTGT 917 301 cattytogagaacagglyatgagocacgglytytytytctglaatyffffylyn Hannitht 359 181 It against continuous actions to the second of the second sec 360 throughthauft aglictini ghat anggleaggebhaaaaggbooreth ppgeagtonnact. 417 249) Canservative 141 a <1...>534 /clone_lib="CD4-16" /tissup_tyre="seedling hypocoty}" /dev_stage="3_day_old" Kieber, J. et al. (1993) Cell 72:427 441.*
/clone-"#IC12T7" packaging extract (Stratagene). We have determined that although first strand one symmetric was initiated using dT, almost all of the ones, begin 8-10 bp from the poly-A tail. The reason for the less of the poly-A tail is most When this library is used please reference the ABRO and: during the Klenow repair of rapped ends before the addition of linkers (3'-5') exc instead of 5' 3' pol). NaGAs (pH 7) /ethansl. A portion of mach cDNA mini-gel. Size selected cDNAs (2 \pm 6.k) were removed from the gel using agarase (New England Biolabs), ligation mix was parkaged in vitto using Gigapark II gold arms and then ligated in a volume of 4 ullovernight. Each size-fraction (0.1 ug) was comprecipitated with 1 ug of phenol:choloroform extracted and precipitated using 0.3 adapters by spun column chromatography using sephacryl to each end. resortion, the ends of the cMNA were made blunt with Klenow likely due to lower than anticipated nucleotide levels limb biCupII (ChishayeseEmpRI digested, degetsphorylated fragment and EcoRI/NotI adapters (Pharmacia) were ligated 113 c 16.4%; and size fractionated on a Pred. No. 0.00e+00; Score 189; 114 q 0; Mismathhes 46, The cDNA was puritied from unligated 145 t DB 118; 21 others ixongth 534; indule 3; inw me!' ing point

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ACCESSION ACCESSION Locus 9 끍 Ъ Ç В Çp Ç DЬ 9 ORIGIN COMMENT REFERENCE REFERENCE BASE COUNT FEATURES SOURCE KEYWORDS Query Match 14.1%; Score 163; DB 123; Longth 340; Bost Josef Similarity 84.8%; Prod No. 3.6% 27%; Longth 340; Marthus (27, 7), Autorities (2, Mismithus (27, Tobio 2), Gago AUTHORS TITLE JOURNAL AUTHORS ORGANISM Tenenal 1095 ATROMINGUIG CITEGUCITE CACALCISCECTIAACEAN ORMEN NA DIRACTO 1886 SOUYCE 336 ttca 339 216 gtaatagtotocoagaattggctttatogcctttgtagcttocattgcgt1attaatgcg 275 156 ataqatacactcctttgcctccctatacatcgntacataccacggtgttccatcgaactg 215 917 TTCA 914 276 gmattgtogagaacaggtgmtgagccacqtgtgtgtctgtaatgttgtggggaacaccttg 335 T14176 310 bp mRNA EST (341 Arabidopsis ibaliana oENA ologo APE12T7, T14176 Submitted (20-BM-1945) CMFC, CFE 1063 ACC, INBA, laboratoire de Breitsjie Moleculaire, BF 27, 31326 Castamet Tolosan cedex, France. Francileyth superiodese, inta fit. On Lebelt of: CMFC, Insboratoire de Richegie du Jeveloppement des plantes, Institut de Bittechnologie des Flantes, Bat 630 91405 Orsay, France. Arabidopsis thaliana Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Magnoliophida; Capparales; Brassicareae; Arabidopsis. 1 (bases 1 to 340) thale cress. A.thaliana;. Cloning vector: ZAPII ; Unpublished CNRS. E mail:lecharny@bdp.ibp.u-psud.fr Direct Submission Krivitzky, M., Jean Jacques, I., Kreis, M. and Lecharny, A. expressed sequence tag; partial cDNA sequence full automatic. Physiological conditions: roots of nitrate treated liquid cultured Eukaryotae; mitochondrial eukaryotes; Viridiplantae; The Arabidopsis thaliana transcribed genome: the GDB cDMA program (bases 1 to 340) /clone_lib="Ors-B" 70 c 61 d A.thaliana" /tissue_type="roots of mitrate treated liquid-cultured /clone="0B073" 1..340 Location/Qualifiers /organism-"Arabidopsis theliane" f) j 107 + 3 others

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Lambda PRL2 is a cDNA library derived from equal quantities of 4
poors of mRNA. The mRNA sources were 1) T day germinated etholated
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Nowman, T., Jo Braija, F.J., Green, F., Keegstra, K., Kende, H.,
Maintesk, I., Ohlroppe, J., Raikhel, K., Somerville, S., Thomas
Retzel, E. and Somerville, C.
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Sudici KEYWORDS E EST. 9932531

seedlings, 2) tissue culture grawn roots, 2) staged plants half with 24 hour light syste, half on 16 hr light, 8 hour dark rosettes; 4) same plants as 3 but aerial tissue (stems, flowers and siliques. The vector is BRE's lambda Zip-Lox. The cDWA thate gross close investory like by Lambela PRL2 strain via colorbia vector-lambela Cip Lin prince To John Clore Britel Cal Related Mit Lambela PRL2 is a SEMA library derived from equal quantities of 4 pools of mRMA. The mRMA sources were 1) 7 day germinated etholared primed cliff. inserts were directionally cloned with Sal-Not arms using oligo dT

ORGANISM Arabidopsis thaliana

Budaryotae; Embryophyta; Magnollophyta; Magnollopsida; Capparales; Brassicacejo; Atakid poix

REFERENCE AUTHORS

1 (bases 1 to 433)
Newman, T., de Bruijn, F.J., Green, F., Keegstra, K., Kende, H.,
McIntosh, L., Obirogge, J., Baikhel, N., Semerville, S., Thomashow, M Retzel, E. and Somerville,

TITLE JOUENAL large-scale partial sequenting of anonymous Arabidopsis sDNA closes Flant Physiol. 106, 1241-1255 (1994) Genes galore: a summary of methods for accessing results from

Contact: Thomas Newman

COMMENT

Michigan State University MSU DOE Plant Research Laboratory

MSU-DOE-PRG, Michigan State University, Plant Biology Bidg., E.

Fax: 517-353-9168 517-353-0854

Email: 22313tcn@ibm.cl.msu.edu. Location/Qualitiers

source

/organism "Atabidopers thaliana" /olone="105G10T7"

ORIGIN BASE COUNT 102 a /strain="va: columbia" a 106 c 92 g 11.7 20 others

Query Match 12.7%; Best Local Similarity 81.4%; Matches 192; Commervative Scotte 146; 1856; Longth 433; Bred Me 6.64# 242; S; Mismatthes 42; Induls 3;

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Db 181 ATCATAGCCTCCTGCTTCTAC-TACNYCGCCACC ACTYACTTCCCTGCCCT 234

RESULT

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DEFINITION 022336 Citrus cDNA, partial sequence (pcMFR1807.131). 91176 da 9.5 mKI;A 151 01-NOV-1996

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ORGAN I SM Citrus unshiu

Pokacystus; Viridiplantas; Embryophyta; Magnotrophyta; Magnotropalda, Pasidas; Oapladales; Butaneae (bases 1 to 326)

REFERENCE AUTHORS TITLE JUJENAL Omura, M.

Omura, National institute of Fruit Tree Science, Okitsu, Department of Citriculture, Okitsu, Chimicu, Shiruck, 424-22, Japan (F mail.o=43294)+ .ffir.op.jp, Tulis81 (43-69-211) Cubmitted (29 SES 1996) to the DDRISBARICO SELF distributes Mitseo Fax:+81-543-69-2115) Direct Submission

REFERENCE AUTHORS (sites)

LNAMMOD TWANNOF TILIE Expressed Dequence Tags of Oltrus Field at Bapid Developing Stage Dapphblished (1996)

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FEATURES

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ORIGIN BASE COUNT

Query Match 12.0%; Best Local Similarity 72.8%; Mit atox Consultation of Score 138; DR 147; Lamyth 326; Pred. Mo. 5.986 225; ", Mixed ther 94; Tadels 1; Gaps

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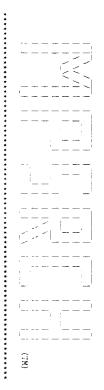
D. Ş Dt. Ş 등 9 DЬ Ş Ъ Ş Pb NID COMMENT SOURCE KEYWORDS ACCESS ION ORIGIN BASE COUNT FEATURES REFERENCE DEFINITION Query Match 11.5%; South 133; DB 55; Length 540; Best Local Similarity 71.9%, Fred. No. 2.15e 214; Matches 232; Conservative 0; Micmatches 89; Indols 2; Caps TITLE AUTHORS JOURNAL ORGANISM source 1004 - Аскандаладарын балуанда каралады Арын Арын Арында байын байттаары 1063 199 tggtgactgtcgatagagaffafagggfqtfgaafaaagfaffccafaacaffgcagaca 258 824 ACACGCATCCTCCCTCACCACACACACCCCCCGACGGGGATGGTTGAGAGAAAGTT 883 864 TOOLTACOGTTEACAGAGACTACGGAATCITGAACAAGGETTECTACAATATTACTGAGA 943 764 TOTACOLACTICO COMPONALICIDA AS CALLES DOCUMENTA TRACTITA ANTRACTIVA 823 378 cattgtggaggag-caaaggagt 400 319 aagcaatcaagcctataatgggtgagtattaccggtatgatggtnc-ccattttacaagg 37770 tittatggggtgmoattgmttattijtfaantijfftnottgftatgafnacatacttgcage 138 ers834 Ricinus communis cDNA clone pers834 similar to plant Tel: Expressed sequence task from developing castor seeds Plant Physiol. 108, 1141-1150 (1995) cloned directionally into Xhol (3') and EcoRI (5') sites. In few castor beam office porce24 library lambdaCAPCT strain Baker 396 vectorelambdaCAPCT promet=TD Relibel—EcoRl Relibe2 Xhol Poly(A)+ RNA was purified from developing stage III to stage V (Greenwood & Bewley, Can. J. Bet. 48(175), 1765, 1982) end-specim plus embayo of Carnegie Institution, 290 Panama St, Stanford, CA 94305 van de Loo, F.J., Tuthet, S. and Somerville, C. Ricinus communis cases, sequence data indicated that this directionality was 115239 T15239 Carnegie Institution Contact: Somerville CR Euphorbiales; Euphorbiaceae; Ricinus. Eucaryotae; Embryophyta; Magnoliophyta; Magnoliopsida; Rosidae; reversed. immature dustin full... LDNA war synthesized and elemed into lambdaZAPIT according to the instructions of the manufacture; 2688895 membrane-bound fatty acid desaturase homologue. (Stratagene): synthesis was primed from the poly(A) tail, and (bases 1 to 540) 132-а 4153251521 crs@andrew.stantord.edu. /strain="Baker 296" a 104 c 134 y /cloner"pcis834" /organism: "Ricinus communis" 1..540 Location/ψυμ!!fiers Partial cDNA clones predominate. . 540 bp mRMA 146 t _____ EST 24 others 28-Jui-1995 : 2

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Search completed: Wed Dec 17 15:53:51 1997
Job time : 1360 sees.



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MPsych na n.a. database search, using Smith-Waterman algorithm

Wed Dec 17 15:10:02 1997; MasPar time 610.94 Seconds 970.450 Million cell updates/sec

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ALIGNMENTS

RESULT 1 LOCUS DEFINITION	H369U8 6U8 bp mRNA EST 25 JUL 1995 15037 Arabidopsis thaliana cDNA clone 180K15T7.
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SOURCE	thale cress clone=18/KJ/57' jbrary=lambda-PRIZ strain=var columbia vector=lambda Zip Low primer T7 dye primer Rsite1 Sul Rsite2-Nut Lambda PRIZ is a cDNA library derived from egaal quantities of 4 pools of mRNA. The mENA surface were 1) 7 day germinated etiolated seeddings; 2) tissue culture grown roots; 3) staged plants half with 24 hour light cycle, half on 16 hr light, 8 hour dark rosettes; 4) same plants as 3 but aerial tissue (stems, flowers and siliques. The vector 15 SPL's lambda Zip-Lox. The cDNA inserts were directionally cloned with Sal-Not arms using oligo dT inserts were directionally cloned with Sal-Not arms using oligo dT
ORGANISM	Arabidopsis thaliana Bucaryotae; Embryophyta; Magneliophyta; Magneliopsida; Capparales; Brassicaceae: Arabidopsis.
REFERENCE	1 (bases 1 to 608) 1 (bases 1 to 608) 1 (reen P. Keenstra K. Kende H.
AUTHORS	<pre>newman, 1., de Brul]U, r. o., steel, r., needstra, n., neide, n., MoIntosh, L., Ohlivsja, J., Blikhel, N., Somerville, S., Thomash, W., Retzel, E. and Somerville, C.</pre>
TITLE JOURNAL	Genes galore: a summary of methods for accessing results from large-scale partial sequencing of anonymous Arabidopsis oDNA clones Flant Physiol. 196, 1241-1255 (1994)
COMMENT	Contact: Thomas Newman MSU-DDE Flant Research Laboratory Michigan State University Michigan State University, Flant Biology Bldg., E. Massing, Mi Tel: 517-353-0454 Fax: 517-353-9168
FEATURES source	Location/Qualifiers 1608 /organism="Arabidopsis thaliana" /clone="180K15T7" /strain="var columbid"
BASE COUNT ORIGIN	126 a 158 c 126 g 138 t 20 others

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Michigan State University MSU-DOE-PRL, Michigan Stat

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Lansing,Mi Tel: 517-353-0854 MSU-DOE Plant Research Laboratory

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Matches

Conservative

Query Match 27.2%; Best Local Similarity 80.7%;

Score 314; DB 44; Length 608; Pred. No. U.UUE+UU;

0; Mismatches 98; Indels 5;

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Contact: Thomas Newman
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              / Match 19.1%; Score 221; DB 163; heigth 246; Local Similarity 95.9%; Fied. No. 8.88e+00;
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Magnollopsida; Capparales; Brassicaceae; Brassica.
1 (bases 1 to 246)
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/organism="Arabidopsis trallings" /clone="107L15T7" /strain="var todumbia"		2
Location/Qualifiers 1528	STRUTTE	175
Tel: 517-353 0854 Fax: 517-353-9168 £mail: 22313tcn@ibm.cl.msu.edu.		
Contact. Indust Newman MEW 200E Flant Posepich Haboratory Michigan State University MSU-DOB-PRL, Michigan State University, Plant Biology Bldg., E. Lamsing, Mi		
Plant Physiol. 106, 1241 1255 (1994)	JOURNAL.	Q
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<pre>BowdingT, de Bruig,F.l., Creen,F., Kocqetta,K., Konde,H., Motteteskil, Oklingpy-T., Baikbel,H., Somerville,S., Thomasbow,M., Potpel,E. and Somerville,C.</pre>	AUTHORS	
Excatyctam, Embryophyta; Magnelrophyta, Magnelropsida; Sapparales; Brassizaceae; Archidepsis. 	27 77 77 27 27 27 27 27 27 27 27 27 27 2	2
primed cDNA 1 Arabidopsis thaliana	ORGANISM	
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9565 Atabid pais thaliana cEWA clone 13515T7.

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Bust Loral Similarity 83.2%; LOWER AND AND AND AND ADDRESS OF THE PROPERTY OF THE PROPER 1155 POATAAMTATIOTEOTAMAAAAAAAAMMITIMMIDAAAMAAMTATIOTEOTOOGGTTMAA 1046 (98 Internative of a control for the first of a control for the first of the first 121 tcataacti/sttgttgtaccagtacaccactttcttgtcaccttccctgtccggttctac 180 181 utugat seseteeti ilgistisististatut oj etienat air asgatigit isategaastig 240 360 texasgatniyt sytintintytetanyytsiyyonisa aggtiooonttigigolagtioonacti 417 §75 CATGOPCCACAACACCTGATGCGCCACC-TGCGTGTGTGTGATATTGTGGAAGACCTTGT 917 241 gtaatagteteeeagaattggetttategeetttgtagetteeattgegttataatgegg 300 248; Conservative 141 a <1...>534 limbedCapII (StratapencEnoPl diposto), dephosphoryland arms and then ligated in a volume of 4 whovernight Each ligation mix was pankaged in vitro using Sigapank II gold packaging extract (Stratagene). We have determined that Kieber, J. et al. (1993) Cell 72:427-441."
/clone="H1C12T7" during the Klennew repair of range-d ends before the addition of linkers (3'-5') exp instead of 5'-3' pol). /tissuo type="seedling hypocotyl" /clone_lib="CD4-16" When this library is used please reference the ABRC and: adapters by spun-column chromatography using sephacryl s-700 and size-fractionared on a lalew melting point likely due to lower than anticipated nucleotide levels dT, almost all of the cDNAs begin 8-10 bp from the poly-A although first strand cDNA synthesis was initiated using size-fraction (0.1 og) was co-precipitated with 1 og of NaOAc (pH 7) /ethansi. phenolicholoroform extracted and precipitated using 0.3 M from the gel using agarase (New England Biolabs), mini-gel. Size selected cDNAs (3 · 6 kb) were removed to martin endi. fragment and EcoRI/NotI adapters (Pharmacia) were ligated reaction, the ends of the cDNA were made blunt with Klenow 16.2%; 113 c The reason for the loss of the poly-A tail is most Score 187; DB 118; Length 534; Pred. No. 0.00e+00; 114 g n; Mismatches 47; Indels 3; The cDWA was purified from unligated A portion of work of NA 145 t 21 others Sden

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DEFINITION A. thaliana transcribed sequence; clone ORO73;
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В Ş NID FOCUS 3 Ş Ş Ъ 2 COMMENT SOURCE ACCESSION DEFINITION RESULT 12 FEATURES REFERENCE KEYWORDS BASE COUNT Matches 184; conservative Usery Match 13.0%; Score 150; DB 55; Length 310; Best Local Clarifactty 82.3%; (red. No. 4.05e 200) AUTHOES ORGANISM JOURNAL ap inos HELLITHER THE THEFT THE THEFT THE THEFT TO 222 268 attatageeteatgettgtaetaegtengeaecaaffactfc 309 121 геаголага групто даага позате програм тептетота столе стрательнагате 180 148 acasayogtytycogtycyayxanoyontttoroyytygyayatotyaagaaagoaato 207 1 ATGGGTGTAGGTGGAAGAATGGAAGTGTGTGTTGTTTTTAAAAAGTTTGAAAGGGACAAC 60 N96287 EST. 2188) Arabidopsis (Coloro CHA Nome Given) N96287 Retzel,E. and Somerville,C. Genes galore: a summary of modifieds for accessing results from large-scale partial deguencing of analymius Arabidopsis 199A clines Plant Physiol. 196, 1241 1985 (1994) seedlings; 2) tissue culture grawn roots; 3) staged plants half with 24 bour light cycle, bull on 16 hr light, 8 hour dark rosettes; 4) same plants as 3 but serial tissue (Stems, Howers and Sillyavs. The coll is BPL's lambd, 5; Exc. The cDNA inserts were directionally chand with Sal Not arms using olige of thate cress clone-4881277 library-Lambda-PRi2 strain-var columbia vector lambda CI, Low pilmor TO dyo pilmor Saltol-Sal Baito2 Hot Lambda PRI2 is a cDNA library derived from equal quantities of 4 Newman, I., de Etalja, F.J., Arabidopsis thaliana g1269060 Email: 22313tcn@ibm.cl.msu.edu. MSU-DOE Plant Research Laboratory Hewmin, T., de Brail, J. P. (1998, E., Skryttr., W., Skryttr., E., Skryttr., Skryttr., Eds., Skryttr., Skr Fax: 517-353-9168 Tel: 517-353-0854 MSU-DOE-PRE, Michigan State University, Plant Biology Bldg., E. Michigan State University Contact: Thomas Newman Brassicaceae; Arabidopsis. Eucaryotae, Embryophy's, Magnoliuphyts, Magnoliupsids, Osppsidos primed cDNA. pools of mana. (bases i to 310) /strain="var columbia" /clone="48F12T7" /organism:"Arubidopsis thaliana" Location/Qualitieses 85 c 432 bp The manh sources were 1) I day germinated etrolated e; Mismatches ed; indexs e; f: 3 WRITE 83 4 others 09-APR-1996 Salte 1

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JECHLUY GONHRBAGR Ç В Ср Ç Вb Ъ B В ORIGIN BASE COUNT FEATURES COMMENT SOURCE Matches 225; Conservative 9. V. Larry Mat 1 TITLE ORGANISM IVIGATOR 1035 ATAATACTCTCCCAGTATCGCCTTTATCGCCTTCGTAGCTTCGATCG-CATCATAATCG-G-977 1095 ATAGATAGA (receptora estre africa calcia e il Agregatione del composito del Calcia Source 976 C CATOSTOS-ACAACACOTCATGOSCACOTCOGOSCO COGGATATTOSCOCAACACOT 920 264 glastagtotocoagaattggotttatcgmotttgtmynttonartggogttataatgog 323 204 at agaitabact potitit geot opptabat abat mort abat anniving transitional organistic 263 384 tigntnaangtteenginginttigittinnggnaggeeauggiteeni 431 Lispeschie partial sequencing of neary as Arabiditisis CMA closes Plant Physical, 196, 1241-1255 (1944) Hamilton, J. S. Stolling, P. J., Chron, C. W., J. (1988), N. Se, H., Weiter, S., C., China, J., Barther, H., Chen, C. (1997), C., China, J. (1997), N., Ch Arabidopsis thaliana with 24 hour light cycle, half on 16 hr light, 8 hour dark-tuesttes; 4) same plants as 3 but arrial fissue (stems, flowers and cilians. The litrary was made in Decopy's Lambda Chiex-MCU DOE PRL, Michigan State University, Plant Biology Bldg., E. Michigan State University Genes galere: a summary of methods for accessing results from 1 (bases 1 to 432) Brassicaceae; Arabidopsis. mANA. The mRNA sources were 1) 7 day germinated etholated thal- oness olome_0383m7 primer=T7 library=Lambda PRU1 strain=var Email: 22313tcn@ibm.cl.msu.edu. Fax: 517-353-9168 Tel: 517 353 0854 Lansing, Mi MSH-DOE Plant Research Laboratory Contact: Thomas Newman Retzel, E. and Somerville, C. For any of any Embryophyta; Magnoliophyta; Magnoliopsida; Capparales; and HindIII sites. with (align dT primed) differtional inserts closed between the BroBl FRLL is a JDNA library derived from equal quantities of 4 pools of rolumbia vertir Lambda Shlix 1 Baitel-BingT Paite? Hindill Lambda in the state of th 119 a 41...432 /strain="var columbia" /clone: "G7H3T7" /organism *Arabidopsis thaliama* 4 . . 4 3 2 and at indifficultifiers 100 c Corru 147; "B 1/4; "v-j*1 470; fred: No. 1.5e 646; Indels 6; Gaps 0; Mismatches 57; Indels 6; Gaps 75 g 127 t 16 others

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KEYWORDS g932531 EST.

SOURCE rosettes; 4) same plants as 3 but aerial tissue (stems, flowers and siliques. The vector is BRL's lambda Zip-Lox. The cDNA inserts were directionally closed with Cal But aims using clip-dr thale cress clone=105GLMT7 inbrary-Lambda PPL2 strain-var columbia vector lambda Dip Lambda Dip Lambda PRL2 is a cDNA inbrary derived from equal quantities of 4 pools of mENA. The mENA sources were 1) 7 day germinated ethiciated primed cDNA. so-dlings; 2) tissue culture grown ricts; 2) staged plants half with 24 hour light cycle, half on 16 hr light, 8 hour dark

ORGANISM Arabidopsis thallana

Brassicaceae; Arabid-psis Eucaryotae; Embryophyta, Magnoliophyta; Magnoliopsida; Capparalos;

REFERENCE (bases 1 to 433)

AUTHORS Newman, T., de Bruijn, F.J., Green, P., Keegstra, K., Kende, H., McIntosh, L., Ohlrogge, J., PriPhal, N., Statistics, Thomashow, M.,

TANGUL large-scale partial sequencing of anonymous Arabidopsis cDNA clones Plant Physical, 186, 1241-1255 (1994) Genes galore: a summary of mothods for accessing results from Retzel, E. and Somerville, C

COMMENT Contact: Thomas Newman

MSU-DuE Plant Research Laboratory

MSU-DOE PRL, Michigan State University, Plant Biology Bldg., E. Michigan State University

Lansing, Mi

Tel: 517 353-0854

Fax: 517-353-9168 22313tcn@ibm.cl.msu.edu.

FEATURES

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/organism "Arabidopois thaliana" /clone="105G10T7"

BASE COUNT 102g. /strain="var columbia" 106 c 92 g - 113 t 20 others

ORIGIN

Query Match 12.4%, Best Local Similarity 80.9%; Matches 191; Conservative Surre 14), SB 56; height 433; Prod. No. 4.45s=238; C. Milmatches 43; indels S;

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DEFINITION Citrus chNA, partial sequence (pcMFF1807.131)

g1669336

30 divis KEYWORDS EST(expressed sequence tag).

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OR CARRIEDM Citrus unshiu

Magnoliopsida; Rosadae; Sapindales; Rutarose Eskaryot ie; Viridiplantae; Embryophytu; Mugnoliophyta;

HEFERENCE 1 (bases 1 to 326)

AUTHORS Omura, M

Omura, National Institute of Fruit Tree Nience, okitso, Separtment of Oitriculture, Okitso, Shimiza, Shizacki 424 82, Japun (Fimal) 2008-08-04 directory pp. Seriosi 643 69 2111, Submitted (Paist 1946) to the MHRIANMRIANTS First designess Mitsuo

Fax:+81-543-69-2115)

REFERENCE (sites)

TITLE AUTHORS Unpublished (1996) Hisada, S., Akihama, T., Endo, T., Morigueto, T. and Omura, M Expressed Sequence Tags of Citrus Fruit at Rapid Developing Stage

COMMENT 'Citrus Genome Analysis'

Location/Qualifiers /organism≕"Citrus unshiu"

/tissue type:"juice sac and pulp segment" a 101 c 58 g 104 t /strain "Miyagawa wase satsuma mandarın" /_lobe-"pcMFB1807.131" /dow stage "ut rupid developing stage"

ORIGIN BASE COUNT

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Ŷ γŞ D, Š В 밁 B ζÝ Ър Ş COMMENT Pochs ORIGIN BASE COUNT FEATURES SOURCE KEYWORDS ACCESSION DEFINITION REFERENCE AUTHORS Matches 232; Conservative TITLE JOURNAL Query Match 11.3%; Best Local Similarity 71.6%; ORGANISM source 1004 AGGCGATAAGCCGATACTGGGAGAGFAfTATCAGTTGCATGGGACGCCGGTGGTTAAGC 1063 378 cattgtggagggag-caaaggagt 400 319 aagcaatcaagcotataatgggtgagtattacoggtatgatggtnc-ccattttacaagg 377 259 ctcatgtagctcatcatcttttgctacagtgccacattaccatgcaatggaggccacta 318 944 - CarAcceptaca: AfroAccepte (for carce) for a for Afranca for Afranca for Aana Acceptaca (for a for a for 199 tggtgactgtcgatagagattatggggtgttgaataaagtattccataacattgcagaca 258 715/34 S40 bp mRNA EST 28-UUL-19: crs834 Ricinus communis cDNA clone pers834 similar to plant membrane-bound fatty avid desaturase bomodogue. Expressed sequence tags from developing castor seeds Plant Physicl. 108, 1141-1150 (1995) Carnegie Institution, 290 Panama St, Stanford, CA 94305 Eucaryotam; Embryophyta; Magnollophyta; Magnollopsida; Rosidae; Ricinus communis cases, sequence data indicated that this directionality was (Stratagene): synthesis was primed from the poly(A) tail, and closed directionally into Thol (3') and EcoRI (5') sites. In few Email: crs@andrew.stanford.edu. van de Loo, F.J., Tutter, S. and Somerville, C. Euphorbiales; Euphorbiaceae; Ricinus. reversed. Partial (DNA closes predominate. . was purified from developing stage III to stage V (Greenwood 6 Bewley, Can. J. Rot. 60:1751-1760, 1982) endosperm plus embryo of EST. g688892 T15239 Tel: 4153251521 Contact: Somerville CR immature castor fruits. cDNA was synthesized and cloned into castor tear clare-pars834 literary=lambdaZAPST strain=Baker 296
vector=lambdaZAPII primer=T3 Rsite1=Eco81 Rsite2-XhoI Foly(A) + RNA lambdaZAPII according to the instructions of the manufacturer (bases 1 to 540) 132 ρ /strain="Baker 296" /clone-"pers834" /organism="Ricinus communis" Location/Qualifiers 104 c Score 131; DB 55; Length 540; Pred. No. 1.96e-212; 0; Mismatches 99; Indels 2; 134 y 146 t 24 others 28-ліL-1995 $sJ\epsilon_{ij}$: ,

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169:FST169	148-EST148	167:FsT167	166.FST166	165:EST165	
164:EST164	163. had 163	162:Fem162	141.854161	160;837160	
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Statistics. Mean 10.911; Variance 2.044; scale 5.338

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SUMMARIES

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Contact: Thomas Newman
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OFGREESM Anabidopsis thaliana

Prissing wife; Arabidopsis. Eucaryotae; Embryophyta; Magnoliophyta; Magnoliopsida; Capparales;

REFERENCE (bases 1 to 488)

SHUHLING Retzel, E. and Somerville, C. McIntesh, L., Obliegge, J., Raikhel, N., Somerville, S., Thomashow, M., Newman, T., de Bruign, F.J., Green, P., Keongstra, K., Konde, H.,

TITLE JOHENAI Genes galore: a summary of methods for accessing results from large scale partial sequencing of acceptance highlatics of the plant Physiol. 106, 1241-1255 (1994) Anabidapars of MA clones

COMMENT

MSU-DOE Plant Research Laboratory Contact: Thomas Newman

Michigan State University

MSU-DOE-PRI, Michigan State University, Plant Biology Bldg., E

Lansing, Mi

Fax: 517:353-9168 l7-353-0854

FEATURES sour ce 22313tcn@ibm.cl.msu.edu. 1..488 La-ation/Qualifiers

/organism="Arabidopsis thal:a%a" /clone="156015T7"

BASE COUNT 102 a 125 c /strain="var columbia" 105 g 137 t 19 others

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McIntosh,L., Ohlrogge,J., Raikhel,N., Comerville,S., Thomashow,M.,
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                                                                                                                                                                                                                                                                                                           Seq primer: T7.
                                                                                                                                                                                                                                                                                                                                        Email: 22313tcn@ibm.cl.msu.edu
                                                                                                                                                                                                                                                                                                                                                                 Fax: 517-353-9168
                                                                                                                                                                                                                                                                                                                                                                                          Tel: 517-353-0854
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that DNA ligase was omitted. After the second straid
                   transcriptise (Pharmadia). Second-strand dDNA was made using the procedure of Gubler and Hoffman (1983) except
                                                                       was catalyzed by Moloney murine leukemia virus reverse
                                                                                                    template and oligo d(t) as primer, first strand synthesis
                                                                                                                             Arabidopsis thaliana (Columbia) seedling hypocotyls as
                                                                                                                                                /note-"Wester: pBlueseript SK-; Site_1: BooRT; Site_2: EcoRT; Using 5 ug of polyadenylated mRNA from 3 day-old
                                                                                                                                                                                                         /strain="Columbia"
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KEYWORDS

EST. g93433? T46100

thale creas cleme-135(577 library Lambdu PRL) strain-var columbia vector-lambdu Zip Nox primer-T7 dye primer Reitel-Sal Reite2-Not Lambdu PRL2 is a cBWA library derived from equal quantities of 4

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9363 Arabidopsis thaliana cDNA clone 13515T7

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Query Match 16.2%; Best Local Similarity 83.2%; томы дуделеренующее сетептельностью до пропред надостаться деста деста под применяющее применяющее применяющее 1155 TONTANCTENTISTISTA CACAACACACCITECTICTCACCITECCISICCESTICCAC 1096 975 CATGGTCGAGAACAGGTGATCCGCCACG-TGCCTGTCCGTCATATTGTGCGAGGGCCTTGT 917 [8] afagatanannontttyontonotatanatngotavatannanggigitonatngaantg 240 30: natigting waanaggitgatgagnnanggitgiteitgiteatgitigitgigae-accitini 359 36) toasagatnegtagtetetgtntanggtaggonaaaggteenottgagoagteecaet 417 248; 141 a ON LIFARUSTE, /tissue type="seedling hypocotyl" /dev_stage="% day-old" /1.5%%4 Kieber, J. et al. (1993) Cell 72.427 441.* packaging extract (Stratagene). We have determined that although first strand cDMA synthesis was initiated using dT, almost all of the cDMAs begin 8-10 bp from the poly-A size-fraction (0.1 ug) was co-precipitated with 1 ug of lambdaCagll (0.15) posential dipoled, 3 pl splinglated aims and then ligated in a volume of 4 of overnight. Each /clone_lib "CD4-16" When this library is used please reference the ARRC and: during the Kienew repair of ragged ends before the addition of linkers (3'-5') exo instead of 5'-3' pol). mini-gel. Size selected cDWAs $(3-6~{\rm kk})$ were removed trum the gel using againse (New England Billabs), /clone="H1C12T7" E_AA (p= ") 440 at 1. phenolicholoroform extracted and precipitated using $0.3~\mathrm{M}$ s-kin and size-fractionated on a 1% low melting point adapters by spun column chromatography using suphacryl to each end. likely due to lower than anticipated nucleotide levels ligation mix was parkaged in vitto using Gogapack II gold fragment and EcoRI/Not1 adapters (Pharmacia) were ligated reaction, the ends of the cONA were made blunt with Klenow 113 с The reason for the loss of the poly A tail is most Shore 187; DB 118; Lemoth 534; Pred, No. 0.00e+00; 114 g 0; Mismatches 47; Indelo The SDMA was purified from unligated A public of oach civila 145 t 21 others

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223; Conservative
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E-mailigdi-sypétégiouse.inta.ft. Un behall of: CNSS, Laboratoire de
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Statistics.

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Mean 10.895; Variance 2.100; scale 5.189

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the source of the result being printed, and is derived by analysis of the total score distribution.

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Arabidopsis thaliana (thale cress)

27-JUL-1995 (Rel. 44, Created)

15037 Arabidopsis thaliana cDNA clone 180K15T7. [2-MAR 1997 (Rel. 51, Last updated, Version

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Ş 믉 43 Newman T., deBruijn F.J., Green P., Keegstra K., Kende H., MoIntesh I., Chirogo J., Baikhol N., Somerville S., Thomashow Retzel E., Somerville C.; "Gene grider a summary of methods for actorsorial results from "Genes grider a summary of methods for actorsorial results from EST. Contact: Thomas Newman MSC DRE Plant Research Laboratory Michigan State University MSC DSE ERD, Michigan State University,Plant Biology RUdy.,E. Lansing,Mi Tel: 517 353 6654 Fax: 517-353-0168 Charophyta/Embogophyta goowpy Embogophyta; Magnodaophyta; Magnodiopeoda; Capparales; Brakeininose; Arabidopsis. Eukaryetae; mitechendrial sukaryotes; Viridiplantae; 11 FEB 1995 (Rel. 42, Created) 12-MAR 1997 (Rel. 51, Last updated, Version 16 16095 Arabidopsis thaliana CDNA clone 14502T7. 994 9806 T46832; AT8329 AGIS; T46832; AGIS July 1995. Arabidopsis thaliana (thale cress) clones"; MEDLINE; 95148729. large-scale partial sequencing of accommons Symple CO-SOMMONO SIACOMO CO O COLORIDA CASTELO ACCIDADA CASTORIO TACO 22313tcm@ibm.cl.msu.edu. NCB1 gi: 949806 standard; RNA; EST; 512 106.1041 1055(1994). Longtion/Qualitiess 16) Atabidopsis cDNA Themashow M.,

host Local completity P4.8%; Matches 379; Compared: Sequence 512 /note-"thale cress" BP; 110 A; 142 C; 100 G; 146 T; 14 other; /strain="var columbia" Shore 305; 0; Mismatches 65; Indels 3; DB 78; Length 512; SdPt)

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/clone="145C2T7"

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Retzel E., Somervillo C.;
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Biology Eldq.,E. Linsing,Mi Tel: 517-353 (854 Fax: 517-353 (4)
Email: 2231%cn@lbm.cl meu.odu. NCBI gl: 033654
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Conservation

Query Match

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Eukaryohany mitodhodhila ookaryohany Viidiplantae;
Char ykyti Meloy flyto yrig; Embry flyto Migroliophyta;
Maypollopsida; Caggarales; Brassimanour, Arabidopsis.
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4860 Arabidopsis thaliana oRNA clone 107L15T7.
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                                                                                            State University MSU 1985 PRG, Michigan State University,Plant
3) [3] S. H., F. Lecch, M. Tele Siz Pol 1884 Fact 517-353-9168
Email: 222134-0-81km.cl.msu.edu. WSE gl: 972668
                                                                                                                                                                                                                                                                                      AGIS; TZŽRES; AGIS July 1995.
                                                                                                                                                                                                                                                    Contact: Thomas Newman MCN-DOF Plant Research Laboratory Michigan
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Fred. No. 0.80e+80;
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8 Section of the sectio ် (၁) ر. در /note="thale cress" /strain="var columbia" /clone-/organism="Arabidopsis thaliana" /clone="107115T7" 129 C 114 C 142 T 24 C HIT 111/01

Matches 318; 9.1 th 18.7%; Scote 216; DB 78; Length 528; Similarity 81.5%; Pr-J. No. 0.00400; Conservative n; Mismatches 65; Indels 7;

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DЬ Ş 56.3 61 | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 1111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 111| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 11| | 1 ATUAASTAGTRAGGAASTAGGIGAAGAAAAGTTTGGGAAGGGAGGGAGGGAGGTTAAGGTT

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22903 CD4-16 Arabidopsis thaliana cENA clone H1Cl2T7.

Eukaryotae; mitochondrial eukaryotes; Viridiplantae;

Arabidopsis thaliana (thale cress)

Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Magnoliopsida; Capparales; Brassicaceae; Arabidopsis

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Newman T., MEDIINE; 95148729 deBruijn F.J., Green F., Keegstra K., Kende H.,

McIntosh L., Ohlrogge J., Raikhel N., Somerville S., Thomashow M., Retzel E., Somerville C.;

large-scale partial sequencing of Genes galore: a summary of methods for accessing results from ationymous Arabidopsis cDNA

clones"

Plant Physiol. 106:1241-1255(1994). Contant: Thomas Newman MST POP Plant Pescatch Enterstory Michigan State University MSU-DOE-PRL, Michigan State University, Plant

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Email: Biology Midg., E. Lansing, M. Tel: \$17-853-0854 Fax: \$17-353-0168 Email: 22313ton9ibm.cl.msu.-du Seq primer: T7. Location/Qualitiers

School and the second s source /unjamism "Anabil psis thaliana" /strain="Columbia"

selected oBNAs (3 - 6 kb) were removed from the gel using size—fractionated on a 1% low melting point miniagel. Size using the procedure of Sphier and modifican (1983) except that DNA ligase was omitted. After the second strand transcriptase (Pharmacia). Second-strand cDNA was made /hote-"Vector: pBluescript SK; Site_1: EcoRI; Site_2: FooRI; Using 5 by of polyadenylated mRNA from 3 day-old agārase (New Emgland Riodabs), phenodocholoroform extracte by spun-column chromatography using sephacryl s-300 and to each end. The cDNA was purified from unligated adapters fragment and EccRI/Not1 adapters (Pharmacia) were ligated reaction, the ends of the cDNA were madeblunt with Klenow template and oligo d(t) as primer, first strand synthesis Arabidopsis thaliana (Columbia) seedling hypocotyls as was catalyzed by Moloney murine leukemia virus reverse

portion of each cDNA size-fraction (0.1 ug) was co-precipitated with 1 ω_1 of lambda2-pH (Stratagenerical digested and precipitated using 0.3 M NaCAc (pH 7)/ethanol. A

determined that although first strand cDNA synthesis was initiated using dT, almost all of the cDNAs begin 8-10 bp from the poly-A tail. The reason for the loss of the poly digapark II gold parkaging extract (Stratagene). We have overnight. Each ligation mix was packaged in vitro using dephosphorylated arms and then ligated in a volume of 4 ul

/tissue_type="seedling hypocotyl"
/dev_stage="3 day-old"
/1 \cox poi). When this library is used please reference the ABRC and: Kieber, J. et al. (1993) Cell 72:427-441. /clone_lib="CD4-16" /clone="H1C12T7" before the addition of linkers (3'-5' exo instead of nucleotide levels during the Klenow repair of ragged ends before the addition of linkers (3'-5') exo instead of 5'-3'tail is most likely due to lower than anticipated

Query Match Best Local S Matches 249; Conservative Similarity 83.68; 2001 - 189; DR 77; Pred. No. 0.00e+00; 0; Mismatches 46; Indels DR 77; 1-ngth 534; <u>ں</u> Gaps

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BE; 141 A; 113 C; 114 G;

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McIntosh L., Ohlrogge J., Raikhel N., Comerville S., Thomashow
Retzel E., Somerville C.,
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12-MAR-1997 (Rel. 51, Last updated, Version 16)
9363 Atabidopsis thaliana (RNA clone 1891677).
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/clone-"13515T7"
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Matches 185; Conservation
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Riology Ridg.,E. lausing,Mi Tul: 517-353-6854 Fax: 517-353-9168
Email: 26315000551m.ci.mss.equ. NCBI gi: 931129
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Magnoliopsida; Capparales; Brassbraceae; Arabidopsis.
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12-MAR-1997 (Rel. 51, Last updated, Version 15)
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Retzel E., Somerville C.,
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Contact: Thomas Newman MCU 188E Flant Bosoutch Laboratory Michigan Crubo University, MCU 188E FEL, MICHIGAN Crubo University, Plant Billoy, Billy, E. Lazio, M. Willey Crubo Nova Bayo 517 353-0168 Billoy, Billy, E. Lazio, M. Willey Crubo Nova 1896 Fee Life Crabo Graph Company for Crubo Nova 1896 Billoy, Billy Crabo Graph Company for Crubo Nova 1896 Billoy, Billy Crabo Graph Company for Crubo Nova 1896 Billoy, Billy Crabo Graph Company for Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billy Crabo Nova 1896 Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Billoy, Bill
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Magnoliopsida; Capparalos; Brassicuceae; Arabidopsis.
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12-MAR-1997 (Rel. 51, Last updated, Version 16)
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., Ohlregge C., Baikhel M., Somerville S., Thoma
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Best Local Similarity 83.2%;
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Mild J. J., "Dir jj. T., Bilkbal H., Greenville C., Thomashow M.,
Retzel E., Somerville C.,
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                                                                                                                                                                                                                                                                                                                              Contact: Thomas Newman MCO PGE Flant To search Laboratory Michigan State University MCO PGE FBL, Michigan State University, Flant Biology Bldg., E. Lansing, M. Tel: 517-353 0864 Fax: 517-353-9168 Email: 2.303ton@icm.cl.msu.edu. N.51 gi: 318083
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Biology Kldg., F. Lansing, Mi Tel: 517-353-0854 Fax: 517-353-9168

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Sequence 534 BP; 141 A; 113 C; 114 G; 145 T; 21 other; <1...>534 /tissur_type "seedling hypocotyl" /dev_stage="3_day-old" /clone_lib="CD4-16" and: Kieber, J. et al. (1993) Cell /clone="H1C12T7" nucleotide levels during the Klenow repair of ragged ends before the addition of linkers (3° 5° oxo instead of 5°-3° tail is most likely due to lower than anticipated from the poly A tail. The reason for the loss of the determined that although first strand cDNA synthesis was Gigapack II gold packaging extract (Stratageme). We have overnight. Each ligation mix was packaged in vitro using pul). When this library is used please reference the ABRC initiated using dT, almost all of the cDNAs begin 8-10 bp 72:427-441.

portion of each cDNA size-fraction (v.l ug) was co-precipitated with l ug of lambduZapil (Stratagen+EcoRI digosted

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McIntosh L., Ohirogge J., Baikhel M., Sumerville S., Thoma
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RESULT ACTION AC 07-MAR-1994 (Rel. 38, Created) 12 MAR-1997 (Rel. 5), Last updated, Version 15) 2341 Atabidopsis thaliana MDWA Mono 48F12T7. Arabidopsis thaliana (thale cress) g931179

Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Magnoliopeldu; (hyperiles; Brassleanmam; Arabidopsis. Eukaryotam; mitochondriał eukaryotes; Viridiplantae;

Newman T., deBruijn F.J., Green P., Keegstra K., Kende H., Meintesh L., Ohlrogge J., Baikhel N., Somerville S., Thomas Retzel E., Somerville C.; MFDLINE; 95148729. Thomashow M.,

clones"; ACIS; T14176; ACIS July 1995. Plant Physical, 106:1241 1255 (1994). Tanno gubero i summury of methods for accossing tosults from large scale partial sequencing of anonymous Arabidopsia cDNA

Contact: Thomas Newman MSU-DOE Plant Research Laboratory Michigan Stato University MSU-DOE-PRE, Michigan Stato University,Plant Biology Bldy ,E. Lacsing,Mi Telo 517 353 0854 P.pv. 517 353 0468 Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empile 2231 Formalism of Empiles 2231 Formalism of Empile 2231 Formalism of Em

entre /strain-"var columbia" /clone="48F12T/" /organism="Arabidopsis thal)ana"

Two attion/Qualifiers

Best Local Similarity 83.3%; Matches 185; Conservative Query Mutch 13.3%; Score 153; DR 79; I Pred. No. 1.69e 252; 0; Mismatches 37; DB 79; Longth 310; indels 0; Gaps

Sequence 310 BP; 73 A; 85 C; 65 G; 83 T; 4 other;

/note-"thale cress"

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Retzel E., Somerville C.;
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Retzel E., Somerville C.;
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Biology Bldg.,E. Jansing,Mi Tel: 517-353-0654 Fax: 517-353-0168
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22 4 4 4 4 4

Sequence 528

Query Match 18,4%; Best Local Similarity 81.4%; Matches 367; Commercative Presd No. O. Doe+foo Scote Sizi 28 78; Length 526,

0; Mismatches 64, Indeks 6;

Cales

BF; 117 A; 129 C; 114 C; 142 T; 26 other;

5 D) 493 ATCAASTOSTALOGOAATTAOTI AACAACCTI HUGGACG ACCTTGAIGTAACGCTI GC2 1 atcaagtggtungggaautusetnuununnetnii ggaegnai haigatgitaanngin 60

g 9 61 cagtttgtcsttgggtgg.cstljt.tsg.com.u.g.obolgsgavavcTTAv&A. 612 | HTTL | HTTL HTTL HTTLHHTHHTH HTTLHH HTTLHH HTTL

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AT52622 W43526; standard; KNA; EST; 534

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Arabidopsis thallana (thale cross)

Eukaryotae; mitochondrial eukaryotes; Viridiplantae;

TRESCUENT OF STREET Katophyta/Embryophyta group; Embryophyta; Magnoliophyta; Magnoliopsida; Capparales; Brassicaceae, Arabidopsis.

- 534

MEDITINE; 95148729

Newman T., deBruijn F.J., Green F., Keegstra K., Kende H., McIntosh L., Ohlrogge J., Baikhel N., Comocrille S., Thoma Thomashow M.,

Retzel E., Somerville C.; "Genes galore: a summary of mothods for accessing results from

large-scale partial sequencing of anonymous Arabidopsis

Plant Physiol. 106:1241-1255(1994). Contact: Thomas Newman MCT POS Plant Sesented Libertainty Michigan University MSU-DOE-PRL, Michigan State University, Plant

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Biology_Bldg., E. Lansing, M. Tel: 517-353-0854 Fax. 517-353-0168 22313tan@ibm.cl.msu.edu Seq primer: T7. .scation/Qualifiers

'organism-"Arabidopsis thaliana"

source

by spun-column chromatography using sephacry) a 300 and size-fractionated on a 1% low melting point mini gel. Size selected cDNAs (3 - 6 kb) were removed from the gel using wis catilysed by Molemey murine leghemic virus inverse transcriptase (Harmacia). Second strand cDNA was made using the procedure of Cabler and Hottmin (1983) except that DNA ligase was omitted. After the second strand Timbe "Meetor: pBluescript SK, Cite_1: ELER; Ste_2: ECORI; Using S my of polyademylated mERN from 3 day—old Arabidopsis thaliana (Columbia) coeding hypototyls as template and oligo d(t) as primer, first strand synthesis tragment and EcoRI/Not1 adaptors (Pharmadia) word ligated to made med. The CRWA was possitional from unlayated adaptors regation, the ends of the aDMA were madeblunt with Klenow agarase (New England Riolads), phahalichalarolors extracte /strain="Columbia"

portion of each cDNA sime-fraction ($\hat{n} = l \cdot n q$) was co-precipitated with $l \cdot n q$ of landsdaraph! (Otradapen-EnuR) digested pre-ipitated using 0.3 M NapAr (pH 7) Asthanol. A

determined that although first strand cDNA synthesis was initiated using dT, almost all of the cDNAs begin 8-10 bp overnight. Each ligation mix was packaged in vitro using Gigapack II gold packaging extract (Stratagene). We have dophosphorylated arms and then 'insted in a volume of 4 ui the poly-A tail. The reason to the loss of the

and: Kieber, J. et al. (1993) Cell 72:427 441."
/clone="H1C12T7" nucleotide levels during the Klenow repair of ragged ends before the addition of linkers (3^{-5}) exo instead of 5^{-3}) pol). When this library is used please reference the ABRC tail is most likely due to lower than anticipated

/clone_lib="CD4-16"

/tissue_type="seedling hypocoty/dev_stage="3 day-old"

mRNA .>534

Sequence 534 BP; 141 A; 113 C; 114 G; 145 T; 21 ather;

Gurty Mutch Best Local S Matches 248; g Mussol Local Similarity 83.2%; Conservative Pred. No. 0 She+OO; Sec. 187; 0; Mismatches 47, Indels PB 77; Tength 534;

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standard; RNA; EST; 432 BP

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D) Ş Ð Ŷ Ъ Ŷ ÷ Query Match Best Leval C Matches Contact: Thomas Newman MCT DNE Plant Research Library Morbhgan State University MSU-DNE-PRE, Michigan State University,Plant Riology Blog.,P. Lansing,Mi Twlm 517 383 0854 Fax. (17 383-9168 Email: 22372-0318-031-0585-0585-0581 gir 931129 Eukoryotae, metochondiial eukaryotes, Viidiplantae, Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Majurdiopsida; Capparaies; Brassicaceae; Arabidopsis. Sequence 310 BP; 73 A; 85 C; 65 G; 83 T; 4 other; McIntosh L., Ohlrogge J., Raikhel R., Somerville S., Thomashow M., Retzel E., Somerville C., 07-MAH-1994 (Rel. 38, Created) 12-MAH-1997 (Rel. 51, Last updated, Version g931129 ATT14:76 AGIS; T14176; AGIS July 1995. Plant Physical, 106:1241 1255 (1944). MEDILINE; 95148729. Anabidopsis thaliana (thale cress) 2341 Arabidopsis thaliana cDNA clone 48F12T7 T14176; large-smale pertial sequencing of anonymous Arabidopsis cDNA 209 digoogbu'thttb:biagesteaiteseteantehtteteefichteiteine factage 267 121 CCACCGCACTETTICAAACGCTCGATCCTTCGCTTCTTTCTCCTACTTCGTGGTGGTACATC 180 Genes galore: a summary of methods for accessing results from 181 ATCATAGGCTGCTGCTTCTACTAGGTCGGCAGTAGTTACTTC 222 148 acaaagogtgtgccgtgcgagaaaccgcctttntcggtgggagatctgaagaaagcaatc 207 61 АТСАА 9 СУСТАСССТВ СТАСАСАСА СУССТТСА ГЕОГОВАСАЛЕТ ГАЛЕЛАЛЬ СТАЛЕТ 120 ç 184; Conservative T., deBruijn F.J., Green P., Koegstra K., Kondo H., Cimilarity 82.98; standard; /note="thale cress" Incation/Qualifiers /strain="var columbia" /clone="48F12T7" /organism="Arabidopsis thaliana" 13.0%; RNA; EST; Score 150; DB 79; 1 Fred. No. 3,60c 249; 0; Mismatches DB 79; Longth 310; 33 00 Indels 0;

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Email: 22313tcn@km.cl.msq.rdp. NC91 gr: 1269060
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Mointoab L., Obiroago J., Faikhel H., Comervillo G., Thomashow M.,
Retzel E., Somerville C.;
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Newman T., deBruijn F.J., Green F., Keegstra K., Kende H.,
MeIntosh L., Ohlrogge J., Raikhel N., Semerville S., Thomashow M.,
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Release 2.13 John F. Collins, Blacomputing Research Unit. Copyright (c) 1993, 1994, 1995. University of Edinburgh, U.K. Distribution rights by Intelligenetics, Inc.

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Mean 10.941; Variance 2.083; scale 5.252

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Retzel E., Somerville C.;
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Brology Bldg., E. Lansing, Mi Tel: 517-353-0854 Fax: 517-353-9168
Email: 22313ten@ibm.cl.mss.edu. NCB1 gi: 933654
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                                                                                                                                                                                                                                                 /strain-"var columbia"
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McIntosh L., Ohltogge J., Baikhel N., Somerville S., Thoma
Petrel E., Somerville C.;
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Biology Bldg.,F. Lansing,Mi Twl. 917-99-094, Par 917-99-9168
Email. 22313tcn8ibm.cl.msu.edu. NCBI gi: 315253
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Contact: Thomas Newman MSU-POE Plant Research Laboratory Michigan
State University MSU-DOE-PRL, Michigan State University,Plant
Brology Bldg.,E. Lansing,Mi Tel: 517-353-0854 Fax: 517-353-0168
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Sequence 488 MG 102 A; 125 G; 185 G; 187 T; 19 other;

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Best Local Similarity 82.9%; State University MSU-DOE-PRL, Michigan State University,Flant Biology Bldy.,E. Cosing,Mi Tel: 617-363-0884 Pox: 617-363-0168 Email: 22313tcn9ikm.cl.msu.edu. NCHI gi: 932668 clones"; Newman T., deBraijn F.J., Green E., Keegstra K., McIntosh L., Ohlrogge J., Raikhel N., Somerville Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Magnoliopsida; Capparales; Brassicaceae; Arabidopsis. Eukaryotae; mitochondrial eukaryotes; Viridiplantae; Arabidopsis thaliana (thale Contact: Thomas Newman MSG-DOE Plant Research Laboratory Michigan ACIE; T27852; ACIE July 1995. Plant Physiol. 106:1241-1255(1994). Retzel E., Somerville C.; MEDLINE; 4860 Arabidopsis thaliana cDNA clone 30-UNN-1994 (Rel. 40, Created) 12 MAR 1997 (Rel. 51, Last upd g932668 T22852; AT8522 "Genes galore: a summary of methods for accessing results from large scale partial sequencing it amenymous Arabidopsis cDNA ď. 35 606 TTACCACGG 376 qtntgaegg 384 256-t dagdaatdaagtggtadgggaaataddtdaadaanniinii tyganggatdatgatgtta 427 - ойодадо Астодай астойствого болаладара байнатеттетсе с байлаадаа 36 67 HITTER A AMERICA I IIII TIHIH I HITTER ANA KATANA MARAMATAN A MARAMATAN MARAMATAN ANA MARAMATAN MARAMATAN ANA MARAMATAN MARAMA 36 utageoracyust goggt caccangost cagogant accast gyct gyat gasacagtt. 135 GROUP APPLIES AND OTTO DOT POSTOPOTO TO TOTAL AND AND AND ATOM accigt resident additing and additional additional and the additional additio THAGAHATHAGIBGITAHGA KACITAH THAA gglicht ab dit wat bedit oet bedreit eent fact bit oet ggaagt at agt dat ogdil 185 306, Cashird (v. 95148729. stundard; Location/Qualifiers BMA; EST; Last updated, Score 244; PB 77; Longth 488; Pred. No. 0.00e+00; cress) AFACCICAACAACCTTTGGGACACGA 0; Mismatches 62; ΒP Version Somerville Kende Thumashow Ξ., ... Sete 466 4.26

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Biology Bldg., E. Lansing, Mi Tel: 517-353-0854 Fax: 517 353-0854

Key Source Email: 22313tcm@ibm.cl.msu.edu Seg primer: T7. determined that although first strand cDNA synthesis was initiated using dT, almost all of the cDNAs begin 8-10 bp from the poly-A tail. The reason for the loss of the poly overnight. Each ligation mix was packaged in vitro using Rigapack II gold packaging extract (Statagene). We have portion of each cDNA size fraction (0.1 kg) was co-preci purated with 1 kg of lambda7apli (5) of specenosPooRl digested and precipitated using 0.3 M NaGAr (pH 2) /ethanol. size-fractionated on a 1% low melting point mini gel. Size selected cDNAs (3 - 6 kb) were removed from the gel using by spun-column chromatography using sephacryl s 300 and that DNA ligase was emitted. After the second strand transcriptase (Pharmacia). Second-strand cDNA was made using the procedure of Gublet and Hoffman (1983) except template and oligo d(t) as primer, first strand synthesis Arabidopsis thaliana (Columbia) scedling hypocotyls as Frote "Vector: phisescript Sk ; Dite_1: huml; Site_2: EroRI; Using 5 ug of polyadenylated mRNA from 3 day-old dephasphorylated arms and then ligated in a molume of 4 w agatase (New England Biolahs), phenoloholon-form extracte to each end. The cDNA was putitied from unligated adapters fragment and EcoRI/NotI adapters (Pharmacia) were ligated readily, the ends of the 25%A were madeblant with Klenow was mahalyzed by Moloney murine leukemia virus reverse /strain="Columbia" Location/Qualifiers "orqueism="Arybidopsis thaliana"

Query March Statumbier 534 mKNA <1...>534 NF; 141 A; 113 C; 114 G; 145 T; 21 other; /clone_lib="CD4-16" /tissue_type-"swedling hypecotyl" /dev stage="3 day-old" /clone="H1C12T7" runheatish layets during the Klemaw repair of ragged ends runheatish layets during the Klemaw repair of ragged ends tail is most likely due to lower than anticipated and. Kither, pol). When this library is used please reference the ABRO before the addition of linkers (3'-5' exc instead of 16.2%; Score 187; DB 77; Length 534; J. et al. (1993) Cell 72.427-441."

Local Similarity Assets; Freds Sec.

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State University MSU-DOE-PRL,

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Biology Bldg.,E. Lansing,Mi Tel: 517-353-0854 Fax: 517-353-9168
Email: 22313tcn@ibm.cl.msu.edu. NCBI gi: 934337
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McIntosh L., Ohlrogge J., Raikhel H., Somerville S., Thoma
Retzel E., Somerville C.;
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Biology Bldg.,E. Lansing,Mi Tel: 517-354-854 Fax: 517-354-968
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McIntosh L., Ohirogge J., Raikhel N., Somerville S., Thomashow M.,
Betzel E., Somerville C.;
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                                                                                            2052 Arabidopsis thaliana cDNA clone 43A5T7.
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SQ TTTT RESULT 1 - 40726-JUL-1995 (Rel. 44, Created) 12-MAR-1997 (Rel. 51, Last updated, Version 13) 14503 Arabidopsis thaliana cDNA clone 172E16T7. н35981; AT98111 MEDLINE; 95148729. Magnoliopsida; Capparales; Brassicaceae; Arabidopsis Charophyta/Embryophyta group; Embryophyta; Magnoliophyta; Eukaryotae; mitochondrial eukaryotes; Viridiplantae; Arabidopsis thaliana (thale cress) g905480 standard; RNA; EST; 407 BP

Contact: Thomas Newman MSU-DOE Plant Research Laboratory Michigan State University MSU-DOE-PRL, Michigan State University, Plant Biology Bldg., E. Lansing, Mi Tel: 517-353-0854 Fax: 517-353-8168 Newman T., deBruijn F.J., Green P., Keegstra K., Kende H., McIntosh L., Ohlrogge J., Raikhel N., Somerville S., Thomashow M., clones"; Retzel E., Somerville C.; Plant Physiol. 106:1241-1255(1994). large-scale partial sequencing of anonymous Acabidopsis cDNA "Genes galore: a summary of methods for accessing results from

/note="thale cress" | Sequence 407 BP; 57 A; 148 C; 59 G; 127 T; 16 other; source 1..407 /strain="var columbia" /clone="172E16T7" /organism="Arabidopsis thaliana"

Email:

22313tcn@ibm.cl.msu.edu. NCBI gi: 905480

Location/Qualifiers

Matches Query Match 2.2%; Best Local Similarity 77.8%; Conservative Score 25; DB 79; Length 407; Pred. No. 1.03e-07; 0; Mismatches 10; Indels . • Gaps

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